

# SEQUENCE LISTING

<110> Caspar, Timothy  
Cordova, Daniel  
Gutteridge, Steven  
Rauh, James  
Smith, Rejane  
Tao, Yong  
Wu, Lihong

<120> Isolation and Uses of Ryanodine Receptors

<130> BB1533 US NA

<150> 60/412,795

<151> 2002-09-23

<150> 60/427,324

<151> 2002-11-18

<160> 149

<170> PatentIn version 3.1

<210> 1

<211> 15679

<212> DNA

<213> Heliothis virescens

<220>

<221> CDS

<222> (251)..(15676)

<223>

<220>

<221> misc\_feature

<222> (5515)

<223> n = c or g

<220>

<221> misc\_feature

<222> (13000)

<223> n = a or t

<400> 1

ctaaattcga aattcccatc tcgactccga ctggaaaggc ccctgattgg gacaatttgt	60
ttatgggacg tgtgattatt ccgaatttag aatcattagt gttgtgaacg gttaaaaatg	120
tgtaaacagt gcgtgcagcg ttgattccag aaaaaacgga tttatttgtg cgttttgacg	180
catgtgtgat gcatttcgag tgttatggca acgttgacgt aaggcactga cagtctactg	240
agaatccaag atg gcg gaa gca gag ggg gga gca agc gag caa gat gat	289
Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp	
1 5 10	
ggt tca atc ttg cgt acg gaa gac atg gtg tgc atg tcg tgc aca gcg	337
Val Ser Ile Leu Arg Thr Glu Asp Met Val Cys Met Ser Cys Thr Ala	
15 20 25	
aca gga gag agg gtg tgc ctg gct gcc gaa ggt ctc ggc aac cgg cac	385
Thr Gly Glu Arg Val Cys Leu Ala Ala Glu Gly Leu Gly Asn Arg His	
30 35 40 45	
tgc ttc ctg gag aat att gcc gac aag aac ata ccg cct gat ctg tcg	433
Cys Phe Leu Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser	
50 55 60	

cag tgt gtg ttt gtc atc gaa cag gcg ctt tca gta aga gct tta cag	481
Gln Cys Val Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln	
65 70 75	
gag ttg gta aca gct gcg gga tct gaa act ggg aaa gaa aac tta ggt	529
Glu Leu Val Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly	
80 85 90	
aaa ggt acc ggt tct ggt tat cgt acg cta cta tac ggc aat gct att	577
Lys Gly Thr Gly Ser Gly Tyr Arg Thr Leu Leu Gly Asn Ala Ile	
95 100 105	
ctt ttg cga cat ctt aac agt gat atg tac ctg gcc tgc ctg tca aca	625
Leu Leu Arg His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr	
110 115 120 125	
tca tca tcc cag gat aag ctg gcc ttt gac gtg ggt ctg caa cag cac	673
Ser Ser Ser Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His	
130 135 140	
tcc caa ggt gaa gcc tgc tgg tgg acc ctg cat cct gcc agc aaa cag	721
Ser Gln Gly Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln	
145 150 155	
aga tcc gag ggc gag aag gtg cga gtc gga gat gac ttg att cta gtc	769
Arg Ser Glu Gly Glu Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val	
160 165 170	
tcc gtg gcc att gag aga tac ttg cac aca acg aaa gag aac gaa gta	817
Ser Val Ala Ile Glu Arg Tyr Leu His Thr Thr Lys Glu Asn Glu Val	
175 180 185	
tcg ata gtg aac gcg tcg ttc cac gtg acg cac tgg tcg gta cag ccc	865
Ser Ile Val Asn Ala Ser Phe His Val Thr His Trp Ser Val Gln Pro	
190 195 200 205	
tat ggt act ggt ata tcg agg atg aag tat gtg ggc tat gtg ttc gga	913
Tyr Gly Thr Gly Ile Ser Arg Met Lys Tyr Val Gly Tyr Val Phe Gly	
210 215 220	
ggt gat gtg ctc agg ttc ttc cat gga ggt gac gag tgt ctc act ata	961
Gly Asp Val Leu Arg Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile	
225 230 235	
cct agc act tgg aca aag gat ggg ggg caa aat atc gta gtc tac aaa	1009
Pro Ser Thr Trp Thr Lys Asp Gly Gly Gln Asn Ile Val Val Tyr Lys	
240 245 250	
gga ggt tca gtg atg tct caa gcc cgt tct cta tgg cgc ctg gag ctg	1057
Gly Gly Ser Val Met Ser Gln Ala Arg Ser Leu Trp Arg Leu Glu Leu	
255 260 265	
gct aga acc aag tgg gcc gga ggt ttc att aac tgg tac cat cct atg	1105
Ala Arg Thr Lys Trp Ala Gly Gly Phe Ile Asn Trp Tyr His Pro Met	
270 275 280 285	
agg att cgg cac atc act act gga aga tat ctt gga gtt aac gac cag	1153
Arg Ile Arg His Ile Thr Thr Gly Arg Tyr Leu Gly Val Asn Asp Gln	
290 295 300	
aat gag ctg tat tta gtt agc aga gag gaa ccc aca aca gct tcc tgt	1201
Asn Glu Leu Tyr Leu Val Ser Arg Glu Glu Pro Thr Thr Ala Ser Cys	
305 310 315	
gcc ttc tgc ctg cgc cag gag aag gat gat cag aag caa gtg tta gaa	1249
Ala Phe Cys Leu Arg Gln Glu Lys Asp Asp Gln Lys Gln Val Leu Glu	
320 325 330	
gac aag gac ttg gag gtc ata ggc gcg ccc atc atc aag tac ggt gac	1297
Asp Lys Asp Leu Glu Val Ile Gly Ala Pro Ile Ile Lys Tyr Gly Asp	
335 340 345	
tcc acc gtc att gtg cag cat tcg gag act ggc ttg tgg ctg tct tat	1345
Ser Thr Val Ile Val Gln His Ser Glu Thr Gly Leu Trp Leu Ser Tyr	
350 355 360 365	
aag tct tac gaa acg aag aag aaa ggc gtg ggt aaa gta gaa gag aag	1393
Lys Ser Tyr Glu Thr Lys Lys Lys Gly Val Gly Lys Val Glu Glu Lys	
370 375 380	



caa gcg att ctc cac gag gaa ggc aag atg gac gat ggc ctc gac ctc	1441
Gln Ala Ile Leu His Glu Glu Gly Lys Met Asp Asp Gly Leu Asp Leu	
385 390 395	
tcc agg tca cag gag gaa gaa tct atg act gct cga gtt atc agg aag	1489
Ser Arg Ser Gln Glu Glu Glu Ser Met Thr Ala Arg Val Ile Arg Lys	
400 405 410	
tgt tct tcg ctg ttc act aag ttt atc aat ggc ctg gaa act ctt caa	1537
Cys Ser Ser Leu Phe Thr Lys Phe Ile Asn Gly Leu Glu Thr Leu Gln	
415 420 425	
gag aac cgt cgt cac tcg atg ttc ttc gcg tca gtg aac ctg ggc gag	1585
Glu Asn Arg Arg His Ser Met Phe Phe Ala Ser Val Asn Leu Gly Glu	
430 435 440 445	
atg gtg atg tgt ctt gaa gat ctc acc aac tac ttc gca cag ccc gat	1633
Met Val Met Cys Leu Glu Asp Leu Thr Asn Tyr Phe Ala Gln Pro Asp	
450 455 460	
gag gat atg gaa cac gaa gaa aag caa aac aaa ttc cgc gcc ctc cgc	1681
Glu Asp Met Glu His Glu Glu Lys Gln Asn Lys Phe Arg Ala Leu Arg	
465 470 475	
aac cgt cag gac ctg ttc caa gag gaa ggc ata ctg aac ctg atc ctc	1729
Asn Arg Gln Asp Leu Phe Gln Glu Glu Gly Ile Leu Asn Leu Ile Leu	
480 485 490	
gaa gct ata gac aag atc aac gtc gtc acg tcc cag ggg ttc ctg gct	1777
Glu Ala Ile Asp Lys Ile Asn Val Val Thr Ser Gln Gly Phe Leu Ala	
495 500 505	
gga ttc ctg gcg gga gac gaa tct gga cag agc tgg gaa atg ata tct	1825
Gly Phe Leu Ala Gly Asp Glu Ser Gly Gln Ser Trp Glu Met Ile Ser	
510 515 520 525	
gga tat ttg tat cag ttg ctg gcg gca ata ata aaa ggc aac cac acg	1873
Gly Tyr Leu Tyr Gln Leu Leu Ala Ala Ile Ile Lys Gly Asn His Thr	
530 535 540	
aac tgc gcg cag ttc gcg aac tcg aac cgg ttc aac tgg ctg ttc tcg	1921
Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg Phe Asn Trp Leu Phe Ser	
545 550 555	
cgc ctc ggc tcg cag gcc tcg ggc gag ggc acc ggc atg ctc gac gtg	1969
Arg Leu Gly Ser Gln Ala Ser Gly Glu Gly Thr Gly Met Leu Asp Val	
560 565 570	
ctg cac tgc atc ctc atc gac tcg cct gaa gcg ctc aat atg atg agg	2017
Leu His Cys Ile Leu Ile Asp Ser Pro Glu Ala Leu Asn Met Met Arg	
575 580 585	
gac gaa cac ata aaa gtg ata atc tct cta tta gaa aag cac gga cgc	2065
Asp Glu His Ile Lys Val Ile Ile Ser Leu Leu Glu Lys His Gly Arg	
590 595 600 605	
gac cct aaa gta cta gat gtg cta tgt tca ctc tgc gtc ggt aac ggc	2113
Asp Pro Lys Val Leu Asp Val Leu Cys Ser Leu Cys Val Gly Asn Gly	
610 615 620	
gtc gcg gtg cgc tcg tca cag aac aac atc tgc gac tat ttg ctg ccc	2161
Val Ala Val Arg Ser Ser Gln Asn Asn Ile Cys Asp Tyr Leu Leu Pro	
625 630 635	
ggc aag aac ctg ttg ctg caa act gcg ctt gta gat cac gta tct agt	2209
Gly Lys Asn Leu Leu Leu Gln Thr Ala Leu Val Asp His Val Ser Ser	
640 645 650	
gtc cgt ccg aac atc ttc gtg ggc cga gta gaa ggg tcg gca gtg tac	2257
Val Arg Pro Asn Ile Phe Val Gly Arg Val Glu Gly Ser Ala Val Tyr	
655 660 665	
cgc aaa tgg tac ttc gag gtg act atg gac cac ata gag aag acc aca	2305
Arg Lys Trp Tyr Phe Glu Val Thr Met Asp His Ile Glu Lys Thr Thr	
670 675 680 685	
cat atg atg cca cat cta cgc ata gga tgg gct aac act act ggt tat	2353
His Met Met Pro His Leu Arg Ile Gly Trp Ala Asn Thr Thr Gly Tyr	
690 695 700	

gtc cca tac ccg ggt ggt ggt gag aag tgg gga ggt aac ggc gtg gga	2401
Val Pro Tyr Pro Gly Gly Gly Glu Lys Trp Gly Gly Asn Gly Val Gly	
705 710 715	
gac gac ctg tac tcg tac ggg ttt gat ggc gcc tac ctc tgg tcc ggc	2449
Asp Asp Leu Tyr Ser Tyr Gly Phe Asp Gly Ala Tyr Leu Trp Ser Gly	
720 725 730	
ggg agg aag acc ccg gtc aat agg act cat gct gaa gag cct tat att	2497
Gly Arg Lys Thr Pro Val Asn Arg Thr His Ala Glu Glu Pro Tyr Ile	
735 740 745	
agg aaa ggt gac gtg ata ggt tgt gca ttg gac ctg acg gta ccc atc	2545
Arg Lys Gly Asp Val Ile Gly Cys Ala Leu Asp Leu Thr Val Pro Ile	
750 755 760 765	
atc aac ttc atg ttc aac gga gtg cgg gtg acg gga tcc ttc acc aac	2593
Ile Asn Phe Met Phe Asn Gly Val Arg Val Thr Gly Ser Phe Thr Asn	
770 775 780	
ttc aat ctg gaa ggc atg ttc ttc ccg gtc atc agc tgc tct agt aag	2641
Phe Asn Leu Glu Gly Met Phe Phe Pro Val Ile Ser Cys Ser Ser Lys	
785 790 795	
ctg agt tgt cgg ttc ctg ctg ggc gga gaa cac ggt aga ctc cgg tac	2689
Leu Ser Cys Arg Phe Leu Leu Gly Gly Glu His Gly Arg Leu Arg Tyr	
800 805 810	
gcg gct cca gaa ggc tac tcc ccg ctg gtg gag tct ctc ctg ccg cag	2737
Ala Ala Pro Glu Gly Tyr Ser Pro Leu Val Glu Ser Leu Leu Pro Gln	
815 820 825	
cag atc ctc agc ctg gag ccg tgc ttc tac ttc ggc aac ctg tcc aag	2785
Gln Ile Leu Ser Leu Glu Pro Cys Phe Tyr Phe Gly Asn Leu Ser Lys	
830 835 840 845	
cgg gcc ttg gct gga ccc ccg cta gta cag gac gat acg gct ttt gtg	2833
Arg Ala Leu Ala Gly Pro Pro Leu Val Gln Asp Asp Thr Ala Phe Val	
850 855 860	
cct acg cct gtt gat act tta cag att act ctg cct aca tat gtg gaa	2881
Pro Thr Pro Val Asp Thr Leu Gln Ile Thr Leu Pro Thr Tyr Val Glu	
865 870 875	
caa atc aga gac aag cta gct gaa aat att cac gaa atg tgg gct atg	2929
Gln Ile Arg Asp Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Met	
880 885 890	
aat aag atc gaa gca ggc tgg atg tac ggc gac cag aga gaa gac ttg	2977
Asn Lys Ile Glu Ala Gly Trp Met Tyr Gly Asp Gln Arg Glu Asp Leu	
895 900 905	
cac aag atc cac ccc tgc ctc gtg ccc ttc gag cga ctc ccg ccc gct	3025
His Lys Ile His Pro Cys Leu Val Pro Phe Glu Arg Leu Pro Pro Ala	
910 915 920 925	
gag aaa cga tac gat ata caa ctt gct gtg cag aca ctc aag act atc	3073
Glu Lys Arg Tyr Asp Ile Gln Leu Ala Val Gln Thr Leu Lys Thr Ile	
930 935 940	
ctg gct ctg ggc tac tac atc agc tta gat aag cct cca gca cgc atc	3121
Leu Ala Leu Gly Tyr Tyr Ile Ser Leu Asp Lys Pro Pro Ala Arg Ile	
945 950 955	
cgc aac gtt cgt ctg ccc aat gaa cct ttc atg cag tcc aac ggc tac	3169
Arg Asn Val Arg Leu Pro Asn Glu Pro Phe Met Gln Ser Asn Gly Tyr	
960 965 970	
aag cca gca cca ctc gac ctg agt gct gtc acc ctg aca ccc aag atg	3217
Lys Pro Ala Pro Leu Asp Leu Ser Ala Val Thr Leu Thr Pro Lys Met	
975 980 985	
gat gag cta gta ggc cag ctg gct gag aac acc cac aac ctt tgg gcc	3265
Asp Glu Leu Val Gly Gln Leu Ala Glu Asn Thr His Asn Leu Trp Ala	
990 995 1000 1005	
agg gag agg ata cag cag gga tgg act tac gga ctt aat gag gac	3310
Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr Gly Leu Asn Glu Asp	
1010 1015 1020	

tcg gac atg cat cga	tcc ccg cac ctg gtg	cca tac ccg aag gtt	3355
Ser Asp Met His Arg	Ser Pro His Leu Val	Pro Tyr Pro Lys Val	
1025	1030	1035	
gac gat gcc atc aag	aag gcc aac agg gac	aca gcc tcg gag act	3400
Asp Asp Ala Ile Lys	Lys Ala Asn Arg Asp	Thr Ala Ser Glu Thr	
1040	1045	1050	
gtg agg acc ctg ctg	gtc tac ggg tat atg	ctg gac ccg cct act	3445
Val Arg Thr Leu Leu	Val Tyr Gly Tyr Met	Leu Asp Pro Pro Thr	
1055	1060	1065	
ggg gag cag cat gaa	gca ctc ttg ttg gaa	gcg tca aaa cag aag	3490
Gly Glu Gln His Glu	Ala Leu Leu Leu Glu	Ala Ser Lys Gln Lys	
1070	1075	1080	
caa gcc gac ttc aga	aca tac cgc gct gag	aag aac tat gcc gtc	3535
Gln Ala Asp Phe Arg	Thr Tyr Arg Ala Glu	Lys Asn Tyr Ala Val	
1085	1090	1095	
agc tct ggg aag tgg	tac ttc gag ttt gag	atc cta acg gct gga	3580
Ser Ser Gly Lys Trp	Tyr Phe Glu Phe Glu	Ile Leu Thr Ala Gly	
1100	1105	1110	
cct atg agg gtc ggc	tgg gct cac gct gat	atg gca cca gga atg	3625
Pro Met Arg Val Gly	Trp Ala His Ala Asp	Met Ala Pro Gly Met	
1115	1120	1125	
atg ctc gga caa gac	gag aac tcc tgg gct	ttt gat ggt tac aat	3670
Met Leu Gly Gln Asp	Glu Asn Ser Trp Ala	Phe Asp Gly Tyr Asn	
1130	1135	1140	
gag gaa aaa gtg tac	agc ggt aac act gag	tct ttc ggc aag caa	3715
Glu Glu Lys Val Tyr	Ser Gly Asn Thr Glu	Ser Phe Gly Lys Gln	
1145	1150	1155	
tgg gct gtt ggt gac	gta gtg ggg gtg ttc	cta gat ctc att gat	3760
Trp Ala Val Gly Asp	Val Val Gly Val Phe	Leu Asp Leu Ile Asp	
1160	1165	1170	
aag acg ata agt ttc	tca ctc aac ggt gag	ttg ttg atg gat gct	3805
Lys Thr Ile Ser Phe	Ser Leu Asn Gly Glu	Leu Leu Met Asp Ala	
1175	1180	1185	
ctt ggc gga gag act	acg ttt gct gat gtc	cag ggt gac aac ttt	3850
Leu Gly Gly Glu Thr	Thr Phe Ala Asp Val	Gln Gly Asp Asn Phe	
1190	1195	1200	
gta cct gct tgc acg	ctt ggt gtc ggc caa	aaa gcc agg tta aca	3895
Val Pro Ala Cys Thr	Leu Gly Val Gly Gln	Lys Ala Arg Leu Thr	
1205	1210	1215	
tac ggt cag gac gtg	aac acg ctg aaa tac	ttc aca aca tgt ggt	3940
Tyr Gly Gln Asp Val	Asn Thr Leu Lys Tyr	Phe Thr Thr Cys Gly	
1220	1225	1230	
ctg cag gag gga tat	gaa cca ttc tgt gtc	aat atg aag aga gac	3985
Leu Gln Glu Gly Tyr	Glu Pro Phe Cys Val	Asn Met Lys Arg Asp	
1235	1240	1245	
gtg act cac tgg tac	acc aaa gac cag ccg	atc ttc gag aat acg	4030
Val Thr His Trp Tyr	Thr Lys Asp Gln Pro	Ile Phe Glu Asn Thr	
1250	1255	1260	
gat gag atg atc gac	acc aga ata gat gtg	acc agg ata cca gct	4075
Asp Glu Met Ile Asp	Thr Arg Ile Asp Val	Thr Arg Ile Pro Ala	
1265	1270	1275	
ggt tca gat aca cct	cca tgc ctc aag att	tcc cac aac acg ttt	4120
Gly Ser Asp Thr Pro	Pro Cys Leu Lys Ile	Ser His Asn Thr Phe	
1280	1285	1290	
gag acg atg gag aaa	gct aac tgg gag ttc	tta cgt ctc tca ctg	4165
Glu Thr Met Glu Lys	Ala Asn Trp Glu Phe	Leu Arg Leu Ser Leu	
1295	1300	1305	
cct gtc atc tgc cat	aac gag ttc att gag	gag gca gaa aaa gcc	4210
Pro Val Ile Cys His	Asn Glu Phe Ile Asp	Glu Ala Glu Lys Ala	
1310	1315	1320	

agg cgt tgg gta gaa atc aag gac cgc caa cgg atc cta atg aaa	4255
Arg Arg Trp Val Glu Ile Lys Asp Arg Gln Arg Ile Leu Met Lys	
1325 1330 1335	
gag gca gtt gaa gct cag atg tcc gcc cat att gac cag atc atg	4300
Glu Ala Val Glu Ala Gln Met Ser Ala His Ile Asp Gln Ile Met	
1340 1345 1350	
agg agc ggt ttc acc atg aac gat att aaa ggt ttg cac tac gaa	4345
Arg Ser Gly Phe Thr Met Asn Asp Ile Lys Gly Leu His Tyr Glu	
1355 1360 1365	
gac aat cag gaa gag ttg ccc agc tcc aag atg aag cgc ctg cct	4390
Asp Asn Gln Glu Glu Leu Pro Ser Ser Lys Met Lys Arg Leu Pro	
1370 1375 1380	
tca agg cca cca cgt aag gga tcc atg aca aga ggt gtt act ata	4435
Ser Arg Pro Pro Arg Lys Gly Ser Met Thr Arg Gly Val Thr Ile	
1385 1390 1395	
caa aat tac aat aat ttg caa cca ggc caa gtc aac ggc atg cac	4480
Gln Asn Tyr Asn Asn Leu Gln Pro Gly Gln Val Asn Gly Met His	
1400 1405 1410	
cgg tcg acc agt gaa gct gaa atg gcc aag tat gac ttg gga gcg	4525
Arg Ser Thr Ser Glu Ala Glu Met Ala Lys Tyr Asp Leu Gly Ala	
1415 1420 1425	
caa ggt ttg acg cct gat gat aag aag gac aag agg gga cga tcg	4570
Gln Gly Leu Thr Pro Asp Asp Lys Lys Asp Lys Arg Gly Arg Ser	
1430 1435 1440	
cct ttc aag ttc ttc aga agc aag cgc ggc gaa agc agt gat cgt	4615
Pro Phe Lys Phe Phe Arg Ser Lys Arg Gly Glu Ser Ser Asp Arg	
1445 1450 1455	
gct aaa tcc cgt aaa tcc aaa aca cca gac ccc ttc agt gat acc	4660
Ala Lys Ser Arg Lys Ser Lys Thr Pro Asp Pro Phe Ser Asp Thr	
1460 1465 1470	
gaa gta tca cca gaa cgt ggt gct cga agg cct aac cct cag atc	4705
Glu Val Ser Pro Glu Arg Gly Ala Arg Arg Pro Asn Pro Gln Ile	
1475 1480 1485	
aaa gtg tca cag gcc aat caa aga tat aac ggc atg aac gcg cgt	4750
Lys Val Ser Gln Ala Asn Gln Arg Tyr Asn Gly Met Asn Ala Arg	
1490 1495 1500	
cct agc agg acc aac ctg tat ggg agc caa gtt ggt ttg aac tcg	4795
Pro Ser Arg Thr Asn Leu Tyr Gly Ser Gln Val Gly Leu Asn Ser	
1505 1510 1515	
aac gct cag atg gcg acg ccc acg caa gac agg aag cag atg acg	4840
Asn Ala Gln Met Ala Thr Pro Thr Gln Asp Arg Lys Gln Met Thr	
1520 1525 1530	
acc agc act ctc gcg cag tcg gct acg gaa act gtc ggc aat gag	4885
Thr Ser Thr Leu Ala Gln Ser Ala Thr Glu Thr Val Gly Asn Glu	
1535 1540 1545	
atc ttc gat gca gag tgt ttg aag ctc atc aat gag tac ttt tat	4930
Ile Phe Asp Ala Glu Cys Leu Lys Leu Ile Asn Glu Tyr Phe Tyr	
1550 1555 1560	
gga gtc agg atc tac cca ggt caa gac cca acc cac atg tac atc	4975
Gly Val Arg Ile Tyr Pro Gly Gln Asp Pro Thr His Met Tyr Ile	
1565 1570 1575	
ggc tgg gtg acc acc cag tac cac ttg cac tct aag gac ttc aac	5020
Gly Trp Val Thr Thr Gln Tyr His Leu His Ser Lys Asp Phe Asn	
1580 1585 1590	
cag agc aag gtc acc aag tcc tct gtc atc atc act gat gat tac	5065
Gln Ser Lys Val Thr Lys Ser Ser Val Ile Ile Thr Asp Asp Tyr	
1595 1600 1605	
gat agg gtt gtt gag aac gta aac cgg caa tcg tgc tac atg gtg	5110
Asp Arg Val Val Glu Asn Val Asn Arg Gln Ser Cys Tyr Met Val	
1610 1615 1620	

cga gct gat gag ctg	tac aac gag gtg atg	gcg gaa gcc acg gcc	5155
Arg Ala Asp Glu Leu	Tyr Asn Glu Val Met	Ala Glu Ala Thr Ala	
1625	1630	1635	
aag ggt gcc tcg caa	ggc atg ttc atc ggc	tgc tcc gtc gac acc	5200
Lys Gly Ala Ser Gln	Gly Met Phe Ile Gly	Cys Ser Val Asp Thr	
1640	1645	1650	
tcc acc ggc agc gtg	tcc ttc acc tgt gag	ggg aag gac acc agc	5245
Ser Thr Gly Ser Val	Ser Phe Thr Cys Glu	Gly Lys Asp Thr Ser	
1655	1660	1665	
ttc aag ttt aag atg	gaa cca gaa aca aaa	ttg ttc ccc gcg atc	5290
Phe Lys Phe Lys Met	Glu Pro Glu Thr Lys	Leu Phe Pro Ala Ile	
1670	1675	1680	
tcc gta gaa gcg acc	tcc aag gag atc ctg	cag ata gag ctg ggc	5335
Ser Val Glu Ala Thr	Ser Lys Glu Ile Leu	Gln Ile Glu Leu Gly	
1685	1690	1695	
aga tca gcc acc agt	ctg cca cta tca gcc	gct gta cta cct acg	5380
Arg Ser Ala Thr Ser	Leu Pro Leu Ser Ala	Ala Val Leu Pro Thr	
1700	1705	1710	
agt gat aag cat gtc	ata cca cag ttc ccg	ccg agg ttg aag gtg	5425
Ser Asp Lys His Val	Ile Pro Gln Phe Pro	Pro Arg Leu Lys Val	
1715	1720	1725	
cag tgc ttg aaa cca	cat cag tgg gct agg	gta ccg aac caa tca	5470
Gln Cys Leu Lys Pro	His Gln Trp Ala Arg	Val Pro Asn Gln Ser	
1730	1735	1740	
cta caa gtc cac gct	ctg aag ttg tcc ggc	atc cgc ggt tgg tcn	5515
Leu Gln Val His Ala	Leu Lys Leu Ser Gly	Ile Arg Gly Trp Xaa	
1745	1750	1755	
atg ctg tgt gaa gac	gcc gtt tct atg cta	gct tta cat ata ccg	5560
Met Leu Cys Glu Asp	Ala Val Ser Met Leu	Ala Leu His Ile Pro	
1760	1765	1770	
gag gaa gat cgc tgc	ata gac att ttg gag	ctg ata gaa atg gac	5605
Glu Glu Asp Arg Cys	Ile Asp Ile Leu Glu	Leu Ile Glu Met Asp	
1775	1780	1785	
aaa ctc cta agt ttc	cat tct cac acc ctc	acg tta tac gct gct	5650
Lys Leu Leu Ser Phe	His Ser His Thr Leu	Thr Leu Tyr Ala Ala	
1790	1795	1800	
tta tgt tac cag agt	aac tac agg gcg gcc	cac gct ctg tgc tcg	5695
Leu Cys Tyr Gln Ser	Asn Tyr Arg Ala Ala	His Ala Leu Cys Ser	
1805	1810	1815	
cac gcg gac cag aag	cag ctg ctg tac gcg	atc cag tcg cag tac	5740
His Ala Asp Gln Lys	Gln Leu Leu Tyr Ala	Ile Gln Ser Gln Tyr	
1820	1825	1830	
atg tcg ggc ccg ctg	cgc cag ggc ttc tac	gat ctg ctc aca gca	5785
Met Ser Gly Pro Leu	Arg Gln Gly Phe Tyr	Asp Leu Leu Thr Ala	
1835	1840	1845	
ctg cat ctc gag tcg	cat gcc acc acc atg	gag gcg tgt aag aac	5830
Leu His Leu Glu Ser	His Ala Thr Thr Met	Glu Ala Cys Lys Asn	
1850	1855	1860	
gag ttc gtg atc ccg	ctg ggc ccg gag ctg	aag gcg ctg tac gag	5875
Glu Phe Val Ile Pro	Leu Gly Pro Glu Leu	Lys Ala Leu Tyr Glu	
1865	1870	1875	
gag ccc gac atg gga	cac tcg ctg cgc tcg	ctg cag acc gag agc	5920
Glu Pro Asp Met Gly	His Ser Leu Arg Ser	Leu Gln Thr Glu Ser	
1880	1885	1890	
gtg cgc ccg cag atg	aag atg acc gat atc	gct gaa agt ata acc	5965
Val Arg Pro Gln Met	Lys Met Thr Asp Ile	Ala Glu Ser Ile Thr	
1895	1900	1905	
gag ata agc aac cta	tac tcg ccg tac ttc	ccg ctg gag gtg gtg	6010
Glu Ile Ser Asn Leu	Tyr Ser Pro Tyr Phe	Pro Leu Glu Val Val	
1910	1915	1920	

cgc gag ttc gtg atg	cag gcg ctg gct	gaa gcc gtg gag acc aac	6055
Arg Glu Phe Val Met	Gln Ala Leu Ala	Glu Ala Val Glu Thr Asn	
1925	1930	1935	
cag gtg cac aac tgg	gat cct gtc ggg ggg	agc aat gag aac ctg	6100
Gln Val His Asn Trp	Asp Pro Val Gly Gly	Ser Asn Glu Asn Leu	
1940	1945	1950	
ttc ctg cct cta ata	aag ttg gtg gac cgt	ctc ctg ctg gtc ggc	6145
Phe Leu Pro Leu Ile	Lys Leu Val Asp Arg	Leu Leu Leu Val Gly	
1955	1960	1965	
atg atg cgc gac gaa	gat gtg gag aag cta	ctc atc atg acc aac	6190
Met Met Arg Asp Glu	Asp Val Glu Lys Leu	Leu Ile Met Thr Asn	
1970	1975	1980	
cct gag aca tgg gac	ccc tcg ttt gac aaa	gag ggt aaa gac gag	6235
Pro Glu Thr Trp Asp	Pro Ser Phe Asp Lys	Glu Gly Lys Asp Glu	
1985	1990	1995	
cac cgc aaa ggt cta	ctc cac atg aaa atg	gcg gaa ggc gct aag	6280
His Arg Lys Gly Leu	Leu His Met Lys Met	Ala Glu Gly Ala Lys	
2000	2005	2010	
ctg cag atg tgt tac	tta ctg caa cat ctc	aac gac ata cag ctg	6325
Leu Gln Met Cys Tyr	Leu Leu Gln His Leu	Asn Asp Ile Gln Leu	
2015	2020	2025	
cgg cac agg gtc gaa	gct acc att gcg ttt	gcg cat gac ttc gtc	6370
Arg His Arg Val Glu	Ala Thr Ile Ala Phe	Ala His Asp Phe Val	
2030	2035	2040	
ggg gat cta cag act	gat cag ctc aga cgt	tac acg gaa atc aag	6415
Gly Asp Leu Gln Thr	Asp Gln Leu Arg Arg	Tyr Thr Glu Ile Lys	
2045	2050	2055	
cag tcg gac ttg ccg	agc gcg gtt gcc gct	aaa aag acg agg gag	6460
Gln Ser Asp Leu Pro	Ser Ala Val Ala Ala	Lys Lys Thr Arg Glu	
2060	2065	2070	
ttc cgt tgt ccg cct	aga gaa cag atg aac	gtt ata ctg agt ttc	6505
Phe Arg Cys Pro Pro	Arg Glu Gln Met Asn	Val Ile Leu Ser Phe	
2075	2080	2085	
aag cac cta gag gaa	gaa gac aag gag aac	tgt ccg tgc ggc gag	6550
Lys His Leu Glu Glu	Glu Asp Lys Glu Asn	Cys Pro Cys Gly Glu	
2090	2095	2100	
gag ctg atc gcg cgc	atg aac gag ttc cac	gac acc ctc atg gcg	6595
Glu Leu Ile Ala Arg	Met Asn Glu Phe His	Asp Thr Leu Met Ala	
2105	2110	2115	
cac gtg tcg ctg cac	gcg ctg cag gag cct	gat gct gcg gaa aat	6640
His Val Ser Leu His	Ala Leu Gln Glu Pro	Asp Ala Ala Glu Asn	
2120	2125	2130	
caa gaa cct gaa gca	aaa ccg ggg gca ttc	ggc aag cta tac aac	6685
Gln Glu Pro Glu Ala	Lys Pro Gly Ala Phe	Gly Lys Leu Tyr Asn	
2135	2140	2145	
att atc aat acg gtc	aag gaa tta gaa gag	gaa gct aag gca ata	6730
Ile Ile Asn Thr Val	Lys Glu Leu Glu Glu	Glu Ala Lys Ala Ile	
2150	2155	2160	
gaa gag cct ccg aag	aag acg cct gag gag	aag ttc cgt aag gtc	6775
Glu Glu Pro Pro Lys	Lys Thr Pro Glu Glu	Lys Phe Arg Lys Val	
2165	2170	2175	
ctc atc cag acc ata	gtg aac tgg gct gag	gag tcg cag ata gaa	6820
Leu Ile Gln Thr Ile	Val Asn Trp Ala Glu	Glu Ser Gln Ile Glu	
2180	2185	2190	
aca ccc aag ctt gtc	aga gaa atg ttc agt	ctt cta gtc cgc cag	6865
Thr Pro Lys Leu Val	Arg Glu Met Phe Ser	Leu Leu Val Arg Gln	
2195	2200	2205	
tac gac gca gta ggc	gaa cta atc cgc gct	cta gag aag aca tac	6910
Tyr Asp Ala Val Gly	Glu Leu Ile Arg Ala	Leu Glu Lys Thr Tyr	
2210	2215	2220	

gtc atc aac gcg aag acc aag tta gat gtc gcc gag atg tgg gtg	6955
Val Ile Asn Ala Lys Thr Lys Leu Asp Val Ala Glu Met Trp Val	
2225 2230 2235	
ggg ctc agc cag atc cga gcc ctg ctg cct gtg cag atg agc cag	7000
Gly Leu Ser Gln Ile Arg Ala Leu Leu Pro Val Gln Met Ser Gln	
2240 2245 2250	
gag gaa gag gaa ctc atg agg aag agg ctc tgg aaa ctt gtg aac	7045
Glu Glu Glu Glu Leu Met Arg Lys Arg Leu Trp Lys Leu Val Asn	
2255 2260 2265	
aac cac acg ttc ttc cag cat cca gat tta atc agg gtg ctc cgc	7090
Asn His Thr Phe Phe Gln His Pro Asp Leu Ile Arg Val Leu Arg	
2270 2275 2280	
gtg cac gag aac gtg atg gcg gtg atg atg aac acg ctc ggc cgc	7135
Val His Glu Asn Val Met Ala Val Met Met Asn Thr Leu Gly Arg	
2285 2290 2295	
cgc gcg cag gcg cag tcc gac gcg cag ccc tcc tca cag cct gtc	7180
Arg Ala Gln Ala Gln Ser Asp Ala Gln Pro Ser Ser Gln Pro Val	
2300 2305 2310	
gcg gag gat aac aag gag aag gac aca tca cac gaa atg gtg gta	7225
Ala Glu Asp Asn Lys Glu Lys Asp Thr Ser His Glu Met Val Val	
2315 2320 2325	
gct tgc tgc cgt ttc ctc tgc tac ttc tgc cgt acc ggg aga cag	7270
Ala Cys Cys Arg Phe Leu Cys Tyr Phe Cys Arg Thr Gly Arg Gln	
2330 2335 2340	
aac cag aag gcc atg ttc gac cac ttc gac ttc ctc ctg gag aac	7315
Asn Gln Lys Ala Met Phe Asp His Phe Asp Phe Leu Leu Glu Asn	
2345 2350 2355	
tcc aac atc ttg ctg tcc aga ccc tcg ctg aga gga tcc acc cct	7360
Ser Asn Ile Leu Leu Ser Arg Pro Ser Leu Arg Gly Ser Thr Pro	
2360 2365 2370	
ctg gac gtg gcc tac tcc agt ctt atg gag aac act gaa cta gcg	7405
Leu Asp Val Ala Tyr Ser Ser Leu Met Glu Asn Thr Glu Leu Ala	
2375 2380 2385	
ctg gct ttg aga gag cac tac ctg gag aag ata gca gtg tac ctg	7450
Leu Ala Leu Arg Glu His Tyr Leu Glu Lys Ile Ala Val Tyr Leu	
2390 2395 2400	
tcc cgc tgt ggt ctg cag agc aac tcg gag ctg gtg gag aag ggg	7495
Ser Arg Cys Gly Leu Gln Ser Asn Ser Glu Leu Val Glu Lys Gly	
2405 2410 2415	
tac cct gac ctc ggc tgg gat cca gtc gag ggg gag cgg tat ctt	7540
Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu Arg Tyr Leu	
2420 2425 2430	
gac ttc ctg agg ttc tgc gtt tgg gta aat ggc gaa agc gta gaa	7585
Asp Phe Leu Arg Phe Cys Val Trp Val Asn Gly Glu Ser Val Glu	
2435 2440 2445	
gaa aac gcg aac cta gtg atc cgt ctg ctg atc cgt cgt cca gag	7630
Glu Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg Arg Pro Glu	
2450 2455 2460	
tgc ctc ggg ccg gcg ctg cgc ggc gag ggc gaa ggc ctg ctg aag	7675
Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly Leu Leu Lys	
2465 2470 2475	
gcc atc gtc gac gcc aac aag atg agc gag agg atc gcc gac agg	7720
Ala Ile Val Asp Ala Asn Lys Met Ser Glu Arg Ile Ala Asp Arg	
2480 2485 2490	
agg aag ctc agg gaa atg gag cag gag gga gat gtt aac ttc agc	7765
Arg Lys Leu Arg Glu Met Glu Gln Glu Gly Asp Val Asn Phe Ser	
2495 2500 2505	
cac ccc ctc ccg gag tca gat gag gat gag gac tac atc gac acg	7810
His Pro Leu Pro Glu Ser Asp Glu Asp Glu Asp Tyr Ile Asp Thr	
2510 2515 2520	

ggc gcc gcc atc ttg aac ttc tac tgt aca ttg gta gat ctg ctc	7855
Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr Leu Val Asp Leu Leu	
2525 2530 2535	
gga aga tgt gct cct gat gct ggc gtt att gct ctc ggc aag aac	7900
Gly Arg Cys Ala Pro Asp Ala Gly Val Ile Ala Leu Gly Lys Asn	
2540 2545 2550	
gag tct ctc cgt gcc cgc gct atc ctg cgg tcg ctg gtg ccg ctg	7945
Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu Val Pro Leu	
2555 2560 2565	
gag gac ctg cag gga gtg ctg agc ctg cgc ttc acg ctc aac aac	7990
Glu Asp Leu Gln Gly Val Leu Ser Leu Arg Phe Thr Leu Asn Asn	
2570 2575 2580	
cct gct gct gga gag gaa cga ccc aag tct gat atg cca tcg ggt	8035
Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser Asp Met Pro Ser Gly	
2585 2590 2595	
ctg atc ccg gga cac aag cag agc gtg gga ctg ttc ctg ggg aga	8080
Leu Ile Pro Gly His Lys Gln Ser Val Gly Leu Phe Leu Gly Arg	
2600 2605 2610	
gtg tac ggc atc gaa act cag gag ttg ttc tac aaa ctg ctg gag	8125
Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe Tyr Lys Leu Leu Glu	
2615 2620 2625	
gaa gcc ttc ctg cct gac ctc agg gct gcc act atg ctg gac agg	8170
Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala Thr Met Leu Asp Arg	
2630 2635 2640	
aac gac ggc tgc gaa tca gac atg gcg ctg tcg atg aac cgc tac	8215
Asn Asp Gly Cys Glu Ser Asp Met Ala Leu Ser Met Asn Arg Tyr	
2645 2650 2655	
atc ggc aac tcg atc ctg ccg ctg ctg atc aaa cac gct tac ttc	8260
Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile Lys His Ala Tyr Phe	
2660 2665 2670	
tac aac gaa gct gag aac tac gcc agt tta ttg gat gcc acg cta	8305
Tyr Asn Glu Ala Glu Asn Tyr Ala Ser Leu Leu Asp Ala Thr Leu	
2675 2680 2685	
cat act gtt tat agg tta tcg aag aac cgc atg tta acc aag ggt	8350
His Thr Val Tyr Arg Leu Ser Lys Asn Arg Met Leu Thr Lys Gly	
2690 2695 2700	
caa cgt gaa gcg gtg tca gac ttc cta gtg gcg ctt act tca gcg	8395
Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala Leu Thr Ser Ala	
2705 2710 2715	
atg cag ccc tct atg ttg ctc aag ctg ctc agg aaa ttg acg gtc	8440
Met Gln Pro Ser Met Leu Leu Lys Leu Leu Arg Lys Leu Thr Val	
2720 2725 2730	
gac gtg tct aaa ctg tcc gag tat act act gtc gct ctt agg ctg	8485
Asp Val Ser Lys Leu Ser Glu Tyr Thr Thr Val Ala Leu Arg Leu	
2735 2740 2745	
ctg acg ctg cac tac gag cgc tgc gcg aag tac tac ggc agc acg	8530
Leu Thr Leu His Tyr Glu Arg Cys Ala Lys Tyr Tyr Gly Ser Thr	
2750 2755 2760	
ggc gcg ggg cag ggc gcg ttc ggc gcg tcg tcg gac gag gag aag	8575
Gly Ala Gly Gln Gly Ala Phe Gly Ala Ser Ser Asp Glu Glu Lys	
2765 2770 2775	
cgc ctc acc atg atg ctc ttc tcc agc atc ttc gac tcg ctc agc	8620
Arg Leu Thr Met Met Leu Phe Ser Ser Ile Phe Asp Ser Leu Ser	
2780 2785 2790	
aag atg gac tac gag ccc gag ctc ttc ggg aag gcg ctg ccc tgt	8665
Lys Met Asp Tyr Glu Pro Glu Leu Phe Gly Lys Ala Leu Pro Cys	
2795 2800 2805	
ctt att gct ata gga tgc gct ctg cct cct gac tac act ctc tca	8710
Leu Ile Ala Ile Gly Cys Ala Leu Pro Pro Asp Tyr Thr Leu Ser	
2810 2815 2820	



aag aac tat gat gat	gag ttt tac ggc aaa	gag caa gct gca ggt	8755
Lys Asn Tyr Asp Asp	Glu Phe Tyr Gly Lys	Glu Gln Ala Ala Gly	
2825	2830	2835	
gac cta gac aac ccc	caa tac gac cct cag	ccc ata aac acg tcc	8800
Asp Leu Asp Asn Pro	Gln Tyr Asp Pro Gln	Pro Ile Asn Thr Ser	
2840	2845	2850	
tca gta gca ttg aac	aat gat ctc aac acg	atc gta cag aag ttc	8845
Ser Val Ala Leu Asn	Asn Asp Leu Asn Thr	Ile Val Gln Lys Phe	
2855	2860	2865	
tcg gaa cat tac cac	gat gcg tgg gct agt	agg aag att gag aac	8890
Ser Glu His Tyr His	Asp Ala Trp Ala Ser	Arg Lys Ile Glu Asn	
2870	2875	2880	
ggc tgg gtg tat ggg	gag ggc tgg tct gat	agc cag aag act cat	8935
Gly Trp Val Tyr Gly	Glu Gly Trp Ser Asp	Ser Gln Lys Thr His	
2885	2890	2895	
cct agg ctg aag cct	tat aat atg ctt aat	gat tat gaa aaa gag	8980
Pro Arg Leu Lys Pro	Tyr Asn Met Leu Asn	Asp Tyr Glu Lys Glu	
2900	2905	2910	
cgt tac aag gag cca	gta cgt gaa tct ctg	aag gct ctt cta gcc	9025
Arg Tyr Lys Glu Pro	Val Arg Glu Ser Leu	Lys Ala Leu Leu Ala	
2915	2920	2925	
atc ggt tgg tct gta	gaa cat tca gaa gta	gac ata ccg agt aac	9070
Ile Gly Trp Ser Val	Glu His Ser Glu Val	Asp Ile Pro Ser Asn	
2930	2935	2940	
aac cga agc tcc atg	gga agg cag tcc aag	tcg gga ggc cgc cct	9115
Asn Arg Ser Ser Met	Gly Arg Gln Ser Lys	Ser Gly Gly Arg Pro	
2945	2950	2955	
ccc gaa att gtg aca	gac tcg gcg act ccg	ttc aac tac aac cct	9160
Pro Glu Ile Val Thr	Asp Ser Ala Thr Pro	Phe Asn Tyr Asn Pro	
2960	2965	2970	
cac cca gtc gac atg	acc aac ttg acg cta	tcg agg gag atg cag	9205
His Pro Val Asp Met	Thr Asn Leu Thr Leu	Ser Arg Glu Met Gln	
2975	2980	2985	
aac atg gcg gag agg	ctc gct gac aac gca	cac gac atc tgg gcg	9250
Asn Met Ala Glu Arg	Leu Ala Asp Asn Ala	His Asp Ile Trp Ala	
2990	2995	3000	
aag aag aag aag gaa	gaa ctt gtt act aat	gga ggt ggc atc cac	9295
Lys Lys Lys Lys Glu	Glu Leu Val Thr Asn	Gly Gly Gly Ile His	
3005	3010	3015	
ccc caa cta gta ccc	tac gac ctc cta aca	gac aaa gaa aag aag	9340
Pro Gln Leu Val Pro	Tyr Asp Leu Leu Thr	Asp Lys Glu Lys Lys	
3020	3025	3030	
aaa gat cga gaa cgt	tct caa gag ttc ctc	aaa tac ctt caa tac	9385
Lys Asp Arg Glu Arg	Ser Gln Glu Phe Leu	Lys Tyr Leu Gln Tyr	
3035	3040	3045	
caa ggg tac aag ctc	cac cgg ccc agc aag	gcg cca caa agt gat	9430
Gln Gly Tyr Lys Leu	His Arg Pro Ser Lys	Ala Pro Gln Ser Asp	
3050	3055	3060	
acg gaa caa acc act	acg ggg gta gca ata	gag ttg aga ttc gca	9475
Thr Glu Gln Thr Thr	Thr Gly Val Ala Ile	Glu Leu Arg Phe Ala	
3065	3070	3075	
tac tcg ctc ctc gag	aaa ttg atc cag tac	atc gat agg gcc acc	9520
Tyr Ser Leu Leu Glu	Lys Leu Ile Gln Tyr	Ile Asp Arg Ala Thr	
3080	3085	3090	
att aat atg aag ctt	ttg aaa cct tcc act	acg ttt agt agg aga	9565
Ile Asn Met Lys Leu	Leu Lys Pro Ser Thr	Thr Phe Ser Arg Arg	
3095	3100	3105	
agt agt ttt aag act	agt acc agg gat att	aag ttc ttt tct aag	9610
Ser Ser Phe Lys Thr	Ser Thr Arg Asp Ile	Lys Phe Phe Ser Lys	
3110	3115	3120	

gtg	gtg	ctg	cct	cta	atg	gag	aag	tat	ttc	tcg	acg	cat	cgt	aac	9655
Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	
				3125					3130					3135	
tac	ttc	ata	gct	gta	gct	acg	gcg	acg	aat	agt	gtt	ggt	gca	gcc	9700
Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	Ser	Val	Gly	Ala	Ala	
				3140					3145					3150	
agc	ctg	aag	gag	aaa	gag	atg	gta	gct	gct	ctg	ttc	tgt	aag	ctg	9745
Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	Leu	Phe	Cys	Lys	Leu	
				3155					3160					3165	
gct	agc	ttg	ctt	aga	tct	aga	ctc	gca	gct	ttc	ggt	cct	gac	gtc	9790
Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly	Pro	Asp	Val	
				3170					3175					3180	
cgc	atc	aca	gtc	cgc	tgt	ctc	caa	gtg	ttg	gtg	agg	ggc	atc	gac	9835
Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Arg	Gly	Ile	Asp	
				3185					3190					3195	
gcc	aag	tcc	tta	gtg	aag	aac	tgc	ccc	gag	ttc	atc	agg	acc	tcc	9880
Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	
				3200					3205					3210	
atg	ttg	acc	ttc	ttc	aac	aat	gtc	gct	gat	gat	gta	ggg	cat	acg	9925
Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	Asp	Val	Gly	His	Thr	
				3215					3220					3225	
atc	atg	aat	ttg	cag	gat	ggt	aaa	tac	gca	cac	cta	cga	ggt	acc	9970
Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala	His	Leu	Arg	Gly	Thr	
				3230					3235					3240	
cac	ttg	aag	aca	tcc	acg	tct	ctc	ggc	tat	atc	cac	gga	gta	ctg	10015
His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Ile	His	Gly	Val	Leu	
				3245					3250					3255	
ctc	ccc	ata	ctg	aca	gcc	aaa	ttc	gac	cat	ctg	gct	aac	tgc	gag	10060
Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His	Leu	Ala	Asn	Cys	Glu	
				3260					3265					3270	
tac	ggt	gct	gat	ctg	ttg	ttg	gac	gag	ata	caa	gtg	gcg	tca	tac	10105
Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	
				3275					3280					3285	
aag	atg	ttg	ggc	tcc	ctg	tac	gcg	ctc	ggc	acg	gac	gct	tcg	ctc	10150
Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly	Thr	Asp	Ala	Ser	Leu	
				3290					3295					3300	
aca	cac	gac	aga	aag	tac	ctc	aag	act	gag	att	gag	aga	cat	aaa	10195
Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Lys	
				3305					3310					3315	
cct	gct	ttg	ggt	tca	tgt	cta	ggt	gcg	ttc	agt	tcg	aca	ttc	cca	10240
Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser	Ser	Thr	Phe	Pro	
				3320					3325					3330	
gta	gcg	ttc	cag	gag	cct	cac	ttg	aac	aaa	cac	aac	cag	ttc	tcc	10285
Val	Ala	Phe	Gln	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Phe	Ser	
				3335					3340					3345	
ttg	ctg	aac	agg	atc	gct	gac	cat	tct	ttg	gaa	gcc	caa	gac	ata	10330
Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	
				3350					3355					3360	
atg	cag	aaa	atg	gaa	caa	tgc	atg	ccg	acg	tta	gag	acg	atc	tta	10375
Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	Leu	Glu	Thr	Ile	Leu	
				3365					3370					3375	
ggc	gag	gtg	gac	caa	ttc	gtg	gag	tca	gac	aag	acg	tac	aac	gaa	10420
Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Glu	
				3380					3385					3390	
gcg	ccg	cat	atc	atc	gat	gtg	gtg	ttg	cct	tta	ctc	tgt	tct	tac	10465
Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro	Leu	Leu	Cys	Ser	Tyr	
				3395					3400					3405	
ttg	ccg	ttc	tgg	tgg	gca	cag	ggg	cct	gat	aat	gtc	act	cct	act	10510
Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp	Asn	Val	Thr	Pro	Thr	
				3410					3415					3420	

ggc gga aac cac gta	aca atg gta aca gcg	gaa cac atg aac cag	10555
Gly Gly Asn His Val	Thr Met Val Thr Ala	Glu His Met Asn Gln	
3425	3430	3435	
ctc ctc aag aat gtt	ctg aag ctc atc aaa	aag aac atc ggc aat	10600
Leu Leu Lys Asn Val	Leu Lys Leu Ile Lys	Lys Asn Ile Gly Asn	
3440	3445	3450	
gag aac gcg ccg tgg	atg acc cgc ata gcc	acc tac acc cag cag	10645
Glu Asn Ala Pro Trp	Met Thr Arg Ile Ala	Thr Tyr Thr Gln Gln	
3455	3460	3465	
atc atc atc aac agc	tcc gag gag ttg ctg	agg gat tcc ttc ctg	10690
Ile Ile Ile Asn Ser	Ser Glu Glu Leu Leu	Arg Asp Ser Phe Leu	
3470	3475	3480	
ccg ctc gct gaa cgt	gtt cgc aag cgc acg	gac aat atg ttc cat	10735
Pro Leu Ala Glu Arg	Val Arg Lys Arg Thr	Asp Asn Met Phe His	
3485	3490	3495	
aag gag gag agc ttg	aga ggg ttt att aag	tcg tca aca gac gac	10780
Lys Glu Glu Ser Leu	Arg Gly Phe Ile Lys	Ser Ser Thr Asp Asp	
3500	3505	3510	
aca tct caa gta gag	tca cag ata caa gaa	gac tgg cag ctg ctg	10825
Thr Ser Gln Val Glu	Ser Gln Ile Gln Glu	Asp Trp Gln Leu Leu	
3515	3520	3525	
gtc aga gac atc tac	tcc ttc tac ccg cta	ctc atc aag tac gtc	10870
Val Arg Asp Ile Tyr	Ser Phe Tyr Pro Leu	Leu Ile Lys Tyr Val	
3530	3535	3540	
gac ctg cag agg aac	cac tgg ctc agg aac	aat gtt cca gag gcg	10915
Asp Leu Gln Arg Asn	His Trp Leu Arg Asn	Asn Val Pro Glu Ala	
3545	3550	3555	
gaa gag ctg tac aac	cac gtg gcc gaa atc	ttc aac ata tgg tcg	10960
Glu Glu Leu Tyr Asn	His Val Ala Glu Ile	Phe Asn Ile Trp Ser	
3560	3565	3570	
aag agc cag tac ttc	ttg aag gag gaa cag	aac ttc atc tct gcc	11005
Lys Ser Gln Tyr Phe	Leu Lys Glu Glu Gln	Asn Phe Ile Ser Ala	
3575	3580	3585	
aac gag att gat aac	atg gtg ctg att atg	cca aca gca aca aga	11050
Asn Glu Ile Asp Asn	Met Val Leu Ile Met	Pro Thr Ala Thr Arg	
3590	3595	3600	
aga gtg aca gca gta	aca gat ggt act cct	caa ggc ggt gga aag	11095
Arg Val Thr Ala Val	Thr Asp Gly Thr Pro	Gln Gly Gly Gly Lys	
3605	3610	3615	
aaa aag aag aag cac	cgt gat aag aaa cgc	gac aaa gac aag gaa	11140
Lys Lys Lys Lys His	Arg Asp Lys Lys Arg	Asp Lys Asp Lys Glu	
3620	3625	3630	
gtc caa gcg tcc cta	atg gta gct tgt ctg	aag agg ttg cta cca	11185
Val Gln Ala Ser Leu	Met Val Ala Cys Leu	Lys Arg Leu Leu Pro	
3635	3640	3645	
gtt ggc ctt aac cta	ttc gct ggc aga gaa	caa gaa ctg gtg cag	11230
Val Gly Leu Asn Leu	Phe Ala Gly Arg Glu	Gln Glu Leu Val Gln	
3650	3655	3660	
cat tgt aaa gac agg	ttc ctg aag gta ggg	acc ctc aag aaa atg	11275
His Cys Lys Asp Arg	Phe Leu Lys Val Gly	Thr Leu Lys Lys Met	
3665	3670	3675	
tca gaa caa gat gtg	gca gaa ttc gcg aag	acc cag ctg aca ctt	11320
Ser Glu Gln Asp Val	Ala Glu Phe Ala Lys	Thr Gln Leu Thr Leu	
3680	3685	3690	
cca gat aaa ata gat	ccg gca gac gaa atg	tct tgg caa cat tac	11365
Pro Asp Lys Ile Asp	Pro Ala Asp Glu Met	Ser Trp Gln His Tyr	
3695	3700	3705	
ttg tat agc aag tta	ggt tcg aag agt aag	agc aat ata act gtg	11410
Leu Tyr Ser Lys Leu	Gly Ser Lys Ser Lys	Ser Asn Ile Thr Val	
3710	3715	3720	

gaa act gct gaa aat	aaa gcc aag att att	gat gat act gtt gaa	11455
Glu Thr Ala Glu Asn	Lys Ala Lys Ile Ile	Asp Asp Thr Val Glu	
3725	3730	3735	
agg atc gtc gct atg	agt aaa gtg ctt ttc	gga ttg cat atg atc	11500
Arg Ile Val Ala Met	Ser Lys Val Leu Phe	Gly Leu His Met Ile	
3740	3745	3750	
gac cat ccc caa caa	atg agt aag aac gtg	tac cgg tcg gtg gtg	11545
Asp His Pro Gln Gln	Met Ser Lys Asn Val	Tyr Arg Ser Val Val	
3755	3760	3765	
tcc ata caa cgc aag	cgc gcc gtc atc gcc	tgc ttc cga caa act	11590
Ser Ile Gln Arg Lys	Arg Ala Val Ile Ala	Cys Phe Arg Gln Thr	
3770	3775	3780	
tca cta cat tct ctg	ccg aga cat cga gcg	tgt aac atc ttc gct	11635
Ser Leu His Ser Leu	Pro Arg His Arg Ala	Cys Asn Ile Phe Ala	
3785	3790	3795	
cgc acg tac tac gag	ctc tgg ttg gaa gag	gag aac att aga caa	11680
Arg Thr Tyr Tyr Glu	Leu Trp Leu Glu Glu	Glu Asn Ile Arg Gln	
3800	3805	3810	
gaa gta atg ata gaa	gat ctt act caa tca	ttc gaa gac gca gag	11725
Glu Val Met Ile Glu	Asp Leu Thr Gln Ser	Phe Glu Asp Ala Glu	
3815	3820	3825	
ctg aag aag agt gag	gtg gtg gag gaa ggt	gag aag cct gag ccc	11770
Leu Lys Lys Ser Asp	Val Val Glu Glu Gly	Glu Lys Pro Asp Pro	
3830	3835	3840	
ctc acg cag ctg gtc	acc acc tcc tgt cgc	ggg gcc atg act gag	11815
Leu Thr Gln Leu Val	Thr Thr Ser Cys Arg	Gly Ala Met Thr Glu	
3845	3850	3855	
agg tcc ggc gct ttg	cag gag gat cct cta	tac atg tct tac gca	11860
Arg Ser Gly Ala Leu	Gln Glu Asp Pro Leu	Tyr Met Ser Tyr Ala	
3860	3865	3870	
cac atc ata gcg aag	tcc tgt gga gaa gaa	gag gaa gaa ggg ggt	11905
His Ile Ile Ala Lys	Ser Cys Gly Glu Glu	Glu Glu Glu Gly Gly	
3875	3880	3885	
ggg gag gaa gag gaa	ggg ggt gga gaa gca	gag gct gaa gac gaa	11950
Gly Glu Glu Glu Glu	Gly Gly Gly Glu Ala	Glu Ala Glu Asp Glu	
3890	3895	3900	
ggc aga gcc agt ata	cac gaa caa gaa atg	gag aaa caa aag ctc	11995
Gly Arg Ala Ser Ile	His Glu Gln Glu Met	Glu Lys Gln Lys Leu	
3905	3910	3915	
cta ttc cac caa gcg	cgg ccg gcg gac cgt	ggg gtt gcc gaa atg	12040
Leu Phe His Gln Ala	Arg Pro Ala Asp Arg	Gly Val Ala Glu Met	
3920	3925	3930	
gtg ttg ctg cac atc	tcc gcg tcc aaa ggc	ctg ccc agc gag atg	12085
Val Leu Leu His Ile	Ser Ala Ser Lys Gly	Leu Pro Ser Glu Met	
3935	3940	3945	
gtc atg aag act tta	cag ctc ggt att agt	ata ctg agg ggc ggc	12130
Val Met Lys Thr Leu	Gln Leu Gly Ile Ser	Ile Leu Arg Gly Gly	
3950	3955	3960	
aat att gat ata cag	atg ggt atg ttg aac	cac ttg aaa gac aag	12175
Asn Ile Asp Ile Gln	Met Gly Met Leu Asn	His Leu Lys Asp Lys	
3965	3970	3975	
aaa gac gtg ggc ttc	ttt acg tcc atc gcc	ggc ctc atg aac tcc	12220
Lys Asp Val Gly Phe	Phe Thr Ser Ile Ala	Gly Leu Met Asn Ser	
3980	3985	3990	
tgc tcc gtg ctc gat	ctt gac gcc ttc gag	agg aac acc aag gct	12265
Cys Ser Val Leu Asp	Leu Asp Ala Phe Glu	Arg Asn Thr Lys Ala	
3995	4000	4005	
gaa ggt ctg ggc gtg	ggt ctg gaa ggt gcg	gcg gga gag aag aac	12310
Glu Gly Leu Gly Val	Gly Leu Glu Gly Ala	Ala Gly Glu Lys Asn	
4010	4015	4020	

atg cat gac gcc gag	ttc acc tgc gca ctc	ttc agg ttc att cag	12355
Met His Asp Ala Glu	Phe Thr Cys Ala Leu	Phe Arg Phe Ile Gln	
4025	4030	4035	
ctc acc tgt gaa gga	cac aac ttg gac tgg	cag aac tac ctg cga	12400
Leu Thr Cys Glu Gly	His Asn Leu Asp Trp	Gln Asn Tyr Leu Arg	
4040	4045	4050	
act cag gcc ggt aac	acg aca aca gtg aac	gtg gtc atc tgc acc	12445
Thr Gln Ala Gly Asn	Thr Thr Thr Val Asn	Val Val Ile Cys Thr	
4055	4060	4065	
gtc gac tac ctg ctg	cgg ctg cag gag tcc	atc atg gac ttc tac	12490
Val Asp Tyr Leu Leu	Arg Leu Gln Glu Ser	Ile Met Asp Phe Tyr	
4070	4075	4080	
tgg cac tac tca agc	aag gaa ctg atc gac	ccg gct ggc aaa gcg	12535
Trp His Tyr Ser Ser	Lys Glu Leu Ile Asp	Pro Ala Gly Lys Ala	
4085	4090	4095	
aac ttc ttc aag gcc	att ggc gtg gct tcc	caa gta ttc aac acc	12580
Asn Phe Phe Lys Ala	Ile Gly Val Ala Ser	Gln Val Phe Asn Thr	
4100	4105	4110	
ctc act gaa gtc ata	cag gga cct tgt acg	cag aat cag cag gct	12625
Leu Thr Glu Val Ile	Gln Gly Pro Cys Thr	Gln Asn Gln Gln Ala	
4115	4120	4125	
ttg gct cac tcc agg	ttg tgg gac gct gtc	ggg ggt ttc ctg ttc	12670
Leu Ala His Ser Arg	Leu Trp Asp Ala Val	Gly Gly Phe Leu Phe	
4130	4135	4140	
cta ttc tcc cac atg	cag gac aag ttg tgc	aag cac tcg tcg cag	12715
Leu Phe Ser His Met	Gln Asp Lys Leu Ser	Lys His Ser Ser Gln	
4145	4150	4155	
gtg gac ctg ctg aag	gaa ctc ctc aat ccg	cag aag gac atg atc	12760
Val Asp Leu Leu Lys	Glu Leu Leu Asn Pro	Gln Lys Asp Met Ile	
4160	4165	4170	
acc atg atg ctg tcc	atg ctt gaa gga aat	gtt gtt aat ggt aca	12805
Thr Met Met Leu Ser	Met Leu Glu Gly Asn	Val Val Asn Gly Thr	
4175	4180	4185	
atc gtc aag caa atg	gtg gac aca cta gta	gga tcg gcc tcc aac	12850
Ile Val Lys Gln Met	Val Asp Thr Leu Val	Gly Ser Ala Ser Asn	
4190	4195	4200	
gtg gaa ctg atc ctg	aaa tac ttc gac atg	ttc ctc aag ctg aag	12895
Val Glu Leu Ile Leu	Lys Tyr Phe Asp Met	Phe Leu Lys Leu Lys	
4205	4210	4215	
gac ctg acc tcc agc	gcc agc ttc cag gag	att gat gcc aat aac	12940
Asp Leu Thr Ser Ser	Ala Ser Phe Gln Glu	Ile Asp Ala Asn Asn	
4220	4225	4230	
gac ggc tgg gtg ctg	ccc aag gac ttc aag	gag aaa atg gaa caa	12985
Asp Gly Trp Val Leu	Pro Lys Asp Phe Lys	Glu Lys Met Glu Gln	
4235	4240	4245	
cag aag agt tat acn	ccc gaa gaa atc gag	ttc ctc cta gct tgc	13030
Gln Lys Ser Tyr Xaa	Pro Glu Glu Ile Glu	Phe Leu Leu Ala Cys	
4250	4255	4260	
tgc gag acg aac cac	gac ggc aag tta gac	tac atc ggt ttc tgc	13075
Cys Glu Thr Asn His	Asp Gly Lys Leu Asp	Tyr Ile Gly Phe Cys	
4265	4270	4275	
gac cgt ttc cac gag	cct gcc aag gag atc	ggg ttt aac ttg gcc	13120
Asp Arg Phe His Glu	Pro Ala Lys Glu Ile	Gly Phe Asn Leu Ala	
4280	4285	4290	
gtg tta ctg act aac	ttg tct gaa cat atg	ccg aac gag cct aga	13165
Val Leu Leu Thr Asn	Leu Ser Glu His Met	Pro Asn Glu Pro Arg	
4295	4300	4305	
ttg gca cgt ttt ctg	gag acg gca ggt tca	gtc ctg gac tac ttc	13210
Leu Ala Arg Phe Leu	Glu Thr Ala Gly Ser	Val Leu Asp Tyr Phe	
4310	4315	4320	

gaa cca ttc ctg ggc	cgt atc gag atc atg	ggc ggc tcc aag cgc	13255
Glu Pro Phe Leu Gly	Arg Ile Glu Ile Met	Gly Gly Ser Lys Arg	
4325	4330	4335	
atc gag cgt gtc tac	ttc gag atc aag gag	tct aat ata gaa cag	13300
Ile Glu Arg Val Tyr	Phe Glu Ile Lys Glu	Ser Asn Ile Glu Gln	
4340	4345	4350	
tgg gag aaa ccg caa	att aag gaa tcc aaa	cgc gcg ttc ttc tac	13345
Trp Glu Lys Pro Gln	Ile Lys Glu Ser Lys	Arg Ala Phe Phe Tyr	
4355	4360	4365	
agc ata gta aca gaa	ggg ggt gat aga gaa	aaa ttg gag gct ttc	13390
Ser Ile Val Thr Glu	Gly Gly Asp Arg Glu	Lys Leu Glu Ala Phe	
4370	4375	4380	
gtg aac ttc tgt gag	gac gcc atc ttt gaa	atg acg cac gcg tcg	13435
Val Asn Phe Cys Glu	Asp Ala Ile Phe Glu	Met Thr His Ala Ser	
4385	4390	4395	
gga ctg atg gcc gcg	tcc gaa gag tcg gtg	gga ggg acc aag aat	13480
Gly Leu Met Ala Ala	Ser Glu Glu Ser Val	Gly Gly Thr Lys Asn	
4400	4405	4410	
aga gag gcc agc tat	atg tat atg ggg gat	gat ggt gat gag aga	13525
Arg Glu Ala Ser Tyr	Met Tyr Met Gly Asp	Asp Gly Asp Glu Arg	
4415	4420	4425	
gcc ggc aaa gat cca	ttc cgt cgc gga ctc	cag tca gtc aaa gac	13570
Ala Gly Lys Asp Pro	Phe Arg Arg Gly Leu	Gln Ser Val Lys Asp	
4430	4435	4440	
ggc gtc gcc acg gca	ttt tca tcc tta tct	cct tcc aac ata aag	13615
Gly Val Ala Thr Ala	Phe Ser Ser Leu Ser	Pro Ser Asn Ile Lys	
4445	4450	4455	
gcg aaa atc gca gac	atg cag caa atg cca	cca gcc gaa cta gct	13660
Ala Lys Ile Ala Asp	Met Gln Gln Met Pro	Pro Ala Glu Leu Ala	
4460	4465	4470	
gtg ggc ttc ttc aaa	atg ttc ttc tat cca	ttc tat tac ttg ggc	13705
Val Gly Phe Phe Lys	Met Phe Phe Tyr Pro	Phe Tyr Tyr Leu Gly	
4475	4480	4485	
tat gga gtt ctc gtc	gtt gtc agg tat ata	ttc ggt gtg ctc ttg	13750
Tyr Gly Val Leu Val	Val Val Arg Tyr Ile	Phe Gly Val Leu Leu	
4490	4495	4500	
ggg ctg atg cga ggt	cct cag acg gat gaa	ccg cct ccg gag ccg	13795
Gly Leu Met Arg Gly	Pro Gln Thr Asp Glu	Pro Pro Pro Glu Pro	
4505	4510	4515	
acg gaa gag gag aaa	atc ggt cag ttg aga	cac agg ttg cta gcg	13840
Thr Glu Glu Glu Lys	Ile Gly Gln Leu Arg	His Arg Leu Leu Ala	
4520	4525	4530	
aca caa agt tct cga	cat ctc ccg gcg ttg	cct cca gct gat gat	13885
Thr Gln Ser Ser Arg	His Leu Pro Ala Leu	Pro Pro Ala Asp Asp	
4535	4540	4545	
acg gga cag atg caa	gtg tcg gca ttc gga	ctc gat atc acc aaa	13930
Thr Gly Gln Met Gln	Val Ser Ala Phe Gly	Leu Asp Ile Thr Lys	
4550	4555	4560	
gaa gac aat gga cag	ata caa gta aaa cct	cac gaa tca ccc agc	13975
Glu Asp Asn Gly Gln	Ile Gln Val Lys Pro	His Glu Ser Pro Ser	
4565	4570	4575	
aca tcc act cca tca	tca ggc ggg gag gcg	gag gtg tca ccc gac	14020
Thr Ser Thr Pro Ser	Ser Gly Gly Glu Ala	Glu Val Ser Pro Asp	
4580	4585	4590	
gag agc gcc gac cac	acg gag gag cag aga	ccg cct tct ctt atc	14065
Glu Ser Ala Asp His	Thr Glu Glu Gln Arg	Pro Pro Ser Leu Ile	
4595	4600	4605	
gac ctg ctt ggt ggg	gaa caa gct aaa aag	caa gct cag gag agg	14110
Asp Leu Leu Gly Gly	Glu Gln Ala Lys Lys	Gln Ala Gln Glu Arg	
4610	4615	4620	

atg gaa gct caa gct gct caa caa gct gcc atg tcg gcc att gaa	14155
Met Glu Ala Gln Ala Ala Gln Gln Ala Ala Met Ser Ala Ile Glu	
4625 4630 4635	
gct gaa agc aaa aag gca gtg caa ggg ccc gca cca tca gcg cta	14200
Ala Glu Ser Lys Lys Ala Val Gln Gly Pro Ala Pro Ser Ala Leu	
4640 4645 4650	
tct caa gtg gac ctg tcc cag tac acc cgg cgc gca gtc tcg ttc	14245
Ser Gln Val Asp Leu Ser Gln Tyr Thr Arg Arg Ala Val Ser Phe	
4655 4660 4665	
cta gct cgc aac ttc tac aac ctg aag tac gtg gcg ctc gtg ctg	14290
Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu	
4670 4675 4680	
gcc ttc tgt atc aac ttc gtg ctg ctc ttc tat aag gta tct acc	14335
Ala Phe Cys Ile Asn Phe Val Leu Leu Phe Tyr Lys Val Ser Thr	
4685 4690 4695	
ctg gat ggt gaa ggt ggt gaa ggt tca ggt ctg ggt gac atc atc	14380
Leu Asp Gly Glu Gly Gly Glu Gly Ser Gly Leu Gly Asp Ile Ile	
4700 4705 4710	
gcc ggt ggg ggt tcc gga tcc ggg gct ggc tct ggc agt gga gac	14425
Ala Gly Gly Gly Ser Gly Ser Gly Ala Gly Ser Gly Ser Gly Asp	
4715 4720 4725	
ggt agc ggc gag aca ggg gaa gat gac gac gcg tta gaa gta gta	14470
Gly Ser Gly Glu Thr Gly Glu Asp Asp Asp Ala Leu Glu Val Val	
4730 4735 4740	
cac ata gac gaa gac ttc ttc tat atg gaa cac gtc atc aag atg	14515
His Ile Asp Glu Asp Phe Phe Tyr Met Glu His Val Ile Lys Met	
4745 4750 4755	
gcg gcc gtg ctg cac tct atc gtg tct ctg gct ata ctc att gga	14560
Ala Ala Val Leu His Ser Ile Val Ser Leu Ala Ile Leu Ile Gly	
4760 4765 4770	
tat tat cat ctt aag gtg ccg cta gcc atc ttc aaa cgt gag aag	14605
Tyr Tyr His Leu Lys Val Pro Leu Ala Ile Phe Lys Arg Glu Lys	
4775 4780 4785	
gag atc gct cgt aag ctg gaa ttc gac ggg ctg tac atc gct gaa	14650
Glu Ile Ala Arg Lys Leu Glu Phe Asp Gly Leu Tyr Ile Ala Glu	
4790 4795 4800	
cag cct gaa gac gac gac ctc aag agc cac tgg gac aag ctc gtt	14695
Gln Pro Glu Asp Asp Asp Leu Lys Ser His Trp Asp Lys Leu Val	
4805 4810 4815	
ata tct gcc aaa tca ttc ccc gta aac tac tgg gac aag ttt gtg	14740
Ile Ser Ala Lys Ser Phe Pro Val Asn Tyr Trp Asp Lys Phe Val	
4820 4825 4830	
aag aag aag gtt cgc gcc aaa tac tcg gag aca tat gac ttc gac	14785
Lys Lys Lys Val Arg Ala Lys Tyr Ser Glu Thr Tyr Asp Phe Asp	
4835 4840 4845	
tcc atc tcc aac atg ttg ggc atg gag aag act tcc ttc tcc gcg	14830
Ser Ile Ser Asn Met Leu Gly Met Glu Lys Thr Ser Phe Ser Ala	
4850 4855 4860	
caa gaa gaa gaa ggc agc aaa gga ctt att cat tac ata atc aac	14875
Gln Glu Glu Glu Gly Ser Lys Gly Leu Ile His Tyr Ile Ile Asn	
4865 4870 4875	
ata gac tgg cgc tac caa gtg tgg aag gcc ggc gtg acg atc aca	14920
Ile Asp Trp Arg Tyr Gln Val Trp Lys Ala Gly Val Thr Ile Thr	
4880 4885 4890	
gac aac tcg ttc ctc tac tcg cta tgg tac ttc tcc ttc tcc gtg	14965
Asp Asn Ser Phe Leu Tyr Ser Leu Trp Tyr Phe Ser Phe Ser Val	
4895 4900 4905	
atg ggg aac ttc aac aac ttc ttc ttc gcg gca cac ttg ttg gac	15010
Met Gly Asn Phe Asn Asn Phe Phe Phe Ala Ala His Leu Leu Asp	
4910 4915 4920	

gtg gct gtt ggg ttt aag acc ctg agg act atc ttg cag tct gtc	15055
Val Ala Val Gly Phe Lys Thr Leu Arg Thr Ile Leu Gln Ser Val	
4925 4930 4935	
acg cat aat gga aaa cag ctg gta tta acg gtg atg ctg ctg act	15100
Thr His Asn Gly Lys Gln Leu Val Leu Thr Val Met Leu Leu Thr	
4940 4945 4950	
ata atc gtg tac atc tac acg gtg atc gcg ttc aac ttc ttc cgc	15145
Ile Ile Val Tyr Ile Tyr Thr Val Ile Ala Phe Asn Phe Phe Arg	
4955 4960 4965	
aag ttc tac gtg cag ggg gag gac gac gaa gtc aat agg aac tgc	15190
Lys Phe Tyr Val Gln Gly Glu Asp Asp Glu Val Asn Arg Asn Cys	
4970 4975 4980	
cat gac atg ttg acg tgc ttc gtg ttc aac ttg tac aag ggt gtg	15235
His Asp Met Leu Thr Cys Phe Val Phe Asn Leu Tyr Lys Gly Val	
4985 4990 4995	
cgg gcg ggc ggc ggc atc ggc gac gag ctg gag ccg cct gat gga	15280
Arg Ala Gly Gly Gly Ile Gly Asp Glu Leu Glu Pro Pro Asp Gly	
5000 5005 5010	
gac gac tcc gag gtc tac cgc atc atc ttc gac atc tcc ttc ttc	15325
Asp Asp Ser Glu Val Tyr Arg Ile Ile Phe Asp Ile Ser Phe Phe	
5015 5020 5025	
ttc ttc atc atc gtt atc ctg ctc gct atc ctg cag ggt ttg atc	15370
Phe Phe Ile Ile Val Ile Leu Leu Ala Ile Leu Gln Gly Leu Ile	
5030 5035 5040	
atc gac gcg ttc gga gag ctg cgt gac cag ttg gag tcg gtc aag	15415
Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Leu Glu Ser Val Lys	
5045 5050 5055	
gag gac atg gag tcc aac tgc ttc atc tgc ggc atc aat aaa gac	15460
Glu Asp Met Glu Ser Asn Cys Phe Ile Cys Gly Ile Asn Lys Asp	
5060 5065 5070	
tat ttt gat aaa gtg ccg cac ggg ttc gac aca cac gtg caa agg	15505
Tyr Phe Asp Lys Val Pro His Gly Phe Asp Thr His Val Gln Arg	
5075 5080 5085	
gaa cac aat tta gct aat tac atg ttc ttc ctc atg cat ctc att	15550
Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile	
5090 5095 5100	
aat aaa ccc gat acg gag tat aca ggt caa gaa acc tac gta tgg	15595
Asn Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp	
5105 5110 5115	
aac atg tac aca caa aga tgt tgg gac ttt ttc ccc gtg gga gat	15640
Asn Met Tyr Thr Gln Arg Cys Trp Asp Phe Phe Pro Val Gly Asp	
5120 5125 5130	
tgt ttc cga aag caa tac gaa gac ctc atg gga gaa tag	15679
Cys Phe Arg Lys Gln Tyr Glu Asp Leu Met Gly Glu	
5135 5140	

<210> 2  
 <211> 5142  
 <212> PRT  
 <213> *Heliothis virescens*

<220> .  
 <221> misc\_feature  
 <222> (1755)..(1755)  
 <223> Xaa = Ser

<220>  
 <221> misc\_feature  
 <222> (4250)..(4250)  
 <223> Xaa = Thr



```

<400> 2
Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Ile
1      5      10      15
Leu Arg Thr Glu Asp Met Val Cys Met Ser Cys Thr Ala Thr Gly Glu
20      25      30
Arg Val Cys Leu Ala Ala Glu Gly Leu Gly Asn Arg His Cys Phe Leu
35      40      45
Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val
50      55      60
Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val
65      70      75      80
Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr
85      90      95
Gly Ser Gly Tyr Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg
100      105      110
His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser
115      120      125
Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly
130      135      140
Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu
145      150      155      160
Gly Glu Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala
165      170      175
Ile Glu Arg Tyr Leu His Thr Thr Lys Glu Asn Glu Val Ser Ile Val
180      185      190
Asn Ala Ser Phe His Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr
195      200      205
Gly Ile Ser Arg Met Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val
210      215      220
Leu Arg Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr
225      230      235      240
Trp Thr Lys Asp Gly Gly Gln Asn Ile Val Val Tyr Lys Gly Gly Ser
245      250      255
Val Met Ser Gln Ala Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr
260      265      270
Lys Trp Ala Gly Gly Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg
275      280      285
His Ile Thr Thr Gly Arg Tyr Leu Gly Val Asn Asp Gln Asn Glu Leu
290      295      300
Tyr Leu Val Ser Arg Glu Glu Pro Thr Thr Ala Ser Cys Ala Phe Cys
305      310      315      320
Leu Arg Gln Glu Lys Asp Asp Gln Lys Gln Val Leu Glu Asp Lys Asp
325      330      335
Leu Glu Val Ile Gly Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val
340      345      350
Ile Val Gln His Ser Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr
355      360      365
Glu Thr Lys Lys Lys Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile
370      375      380
Leu His Glu Glu Gly Lys Met Asp Asp Gly Leu Asp Leu Ser Arg Ser
385      390      395      400
Gln Glu Glu Glu Ser Met Thr Ala Arg Val Ile Arg Lys Cys Ser Ser
405      410      415
Leu Phe Thr Lys Phe Ile Asn Gly Leu Glu Thr Leu Gln Glu Asn Arg
420      425      430
Arg His Ser Met Phe Phe Ala Ser Val Asn Leu Gly Glu Met Val Met
435      440      445
Cys Leu Glu Asp Leu Thr Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met
450      455      460

```

Glu	His	Glu	Glu	Lys	Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	
465					470					475					480	
Asp	Leu	Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	
				485					490						495	
Asp	Lys	Ile	Asn	Val	Val	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu	
			500					505					510			
Ala	Gly	Asp	Glu	Ser	Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu	
		515					520					525				
Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala		
	530					535				540						
Gln	Phe	Ala	Asn	Ser	Asn	Arg	Phe	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	
545					550					555					560	
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	
				565					570						575	
Ile	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	
			580					585					590			
Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	
		595					600					605				
Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	
	610					615					620					
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	
625					630					635					640	
Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	
				645					650						655	
Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	
			660					665					670			
Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met	
		675					680						685			
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	
	690					695					700					
Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	
705					710					715					720	
Tyr	Ser	Tyr	Gly	Phe	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	
				725					730						735	
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	
			740					745					750			
Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	
		755					760					765				
Met	Phe	Asn	Gly	Val	Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	
	770					775					780					
Glu	Gly	Met	Phe	Phe	Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	
785					790					795					800	
Arg	Phe	Leu	Leu	Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro		
				805					810						815	
Glu	Gly	Tyr	Ser	Pro	Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	
			820					825					830			
Ser	Leu	Glu	Pro	Cys	Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	
		835					840					845				
Ala	Gly	Pro	Pro	Leu	Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	
	850					855					860					
Val	Asp	Thr	Leu	Gln	Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	
865					870					875					880	
Asp	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	Met	Trp	Ala	Met	Asn	Lys	Ile	
				885					890						895	
Glu	Ala	Gly	Trp	Met	Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His	Lys	Ile	
			900				905						910			
His	Pro	Cys	Leu	Val	Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu	Lys	Arg	
		915					920					925				
Tyr	Asp	Ile	Gln	Leu	Ala	Val	Gln	Thr	Leu	Lys	Thr	Ile	Leu	Ala	Leu	
	930					935						940				

Gly	Tyr	Tyr	Ile	Ser	Leu	Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Asn	Val	945	950	955	960
Arg	Leu	Pro	Asn	Glu	Pro	Phe	Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	965	970	975	
Pro	Leu	Asp	Leu	Ser	Ala	Val	Thr	Leu	Thr	Pro	Lys	Met	Asp	Glu	Leu	980	985	990	
Val	Gly	Gln	Leu	Ala	Glu	Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	995	1000	1005	
Ile	Gln	Gln	Gly	Trp	Thr	Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Asp	Met		1010	1015	1020	
His	Arg	Ser	Pro	His	Leu	Val	Pro	Tyr	Pro	Lys	Val	Asp	Asp	Ala		1025	1030	1035	
Ile	Lys	Lys	Ala	Asn	Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr		1040	1045	1050	
Leu	Leu	Val	Tyr	Gly	Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln		1055	1060	1065	
His	Glu	Ala	Leu	Leu	Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp		1070	1075	1080	
Phe	Arg	Thr	Tyr	Arg	Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly		1085	1090	1095	
Lys	Trp	Tyr	Phe	Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg		1100	1105	1110	
Val	Gly	Trp	Ala	His	Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly		1115	1120	1125	
Gln	Asp	Glu	Asn	Ser	Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys		1130	1135	1140	
Val	Tyr	Ser	Gly	Asn	Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val		1145	1150	1155	
Gly	Asp	Val	Val	Gly	Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile		1160	1165	1170	
Ser	Phe	Ser	Leu	Asn	Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly		1175	1180	1185	
Glu	Thr	Thr	Phe	Ala	Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala		1190	1195	1200	
Cys	Thr	Leu	Gly	Val	Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln		1205	1210	1215	
Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu		1220	1225	1230	
Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His		1235	1240	1245	
Trp	Tyr	Thr	Lys	Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met		1250	1255	1260	
Ile	Asp	Thr	Arg	Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp		1265	1270	1275	
Thr	Pro	Pro	Cys	Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met		1280	1285	1290	
Glu	Lys	Ala	Asn	Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile		1295	1300	1305	
Cys	His	Asn	Glu	Phe	Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp		1310	1315	1320	
Val	Glu	Ile	Lys	Asp	Arg	Gln	Arg	Ile	Leu	Met	Lys	Glu	Ala	Val		1325	1330	1335	
Glu	Ala	Gln	Met	Ser	Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly		1340	1345	1350	
Phe	Thr	Met	Asn	Asp	Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln		1355	1360	1365	
Glu	Glu	Leu	Pro	Ser	Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro		1370	1375	1380	
Pro	Arg	Lys	Gly	Ser	Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr		1385	1390	1395	

Asn	Asn	Leu	Gln	Pro	Gly	Gln	Val	Asn	Gly	Met	His	Arg	Ser	Thr
	1400					1405					1410			
Ser	Glu	Ala	Glu	Met	Ala	Lys	Tyr	Asp	Leu	Gly	Ala	Gln	Gly	Leu
	1415					1420					1425			
Thr	Pro	Asp	Asp	Lys	Lys	Asp	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys
	1430					1435					1440			
Phe	Phe	Arg	Ser	Lys	Arg	Gly	Glu	Ser	Ser	Asp	Arg	Ala	Lys	Ser
	1445					1450					1455			
Arg	Lys	Ser	Lys	Thr	Pro	Asp	Pro	Phe	Ser	Asp	Thr	Glu	Val	Ser
	1460					1465					1470			
Pro	Glu	Arg	Gly	Ala	Arg	Arg	Pro	Asn	Pro	Gln	Ile	Lys	Val	Ser
	1475					1480					1485			
Gln	Ala	Asn	Gln	Arg	Tyr	Asn	Gly	Met	Asn	Ala	Arg	Pro	Ser	Arg
	1490					1495					1500			
Thr	Asn	Leu	Tyr	Gly	Ser	Gln	Val	Gly	Leu	Asn	Ser	Asn	Ala	Gln
	1505					1510					1515			
Met	Ala	Thr	Pro	Thr	Gln	Asp	Arg	Lys	Gln	Met	Thr	Thr	Ser	Thr
	1520					1525					1530			
Leu	Ala	Gln	Ser	Ala	Thr	Glu	Thr	Val	Gly	Asn	Glu	Ile	Phe	Asp
	1535					1540					1545			
Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr	Gly	Val	Arg
	1550					1555					1560			
Ile	Tyr	Pro	Gly	Gln	Asp	Pro	Thr	His	Met	Tyr	Ile	Gly	Trp	Val
	1565					1570					1575			
Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Lys	Asp	Phe	Asn	Gln	Ser	Lys
	1580					1585					1590			
Val	Thr	Lys	Ser	Ser	Val	Ile	Ile	Thr	Asp	Asp	Tyr	Asp	Arg	Val
	1595					1600					1605			
Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys	Tyr	Met	Val	Arg	Ala	Asp
	1610					1615					1620			
Glu	Leu	Tyr	Asn	Glu	Val	Met	Ala	Glu	Ala	Thr	Ala	Lys	Gly	Ala
	1625					1630					1635			
Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Ser	Val	Asp	Thr	Ser	Thr	Gly
	1640					1645					1650			
Ser	Val	Ser	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser	Phe	Lys	Phe
	1655					1660					1665			
Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe	Pro	Ala	Ile	Ser	Val	Glu
	1670					1675					1680			
Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	Arg	Ser	Ala
	1685					1690					1695			
Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr	Ser	Asp	Lys
	1700					1705					1710			
His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu
	1715					1720					1725			
Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Gln	Ser	Leu	Gln	Val
	1730					1735					1740			
His	Ala	Leu	Lys	Leu	Ser	Gly	Ile	Arg	Gly	Trp	Xaa	Met	Leu	Cys
	1745					1750					1755			
Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp
	1760					1765					1770			
Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp	Lys	Leu	Leu
	1775					1780					1785			
Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	Leu	Cys	Tyr
	1790					1795					1800			
Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Ser	His	Ala	Asp
	1805					1810					1815			
Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Gln	Ser	Gln	Tyr	Met	Ser	Gly
	1820					1825					1830			
Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Thr	Ala	Leu	His	Leu
	1835					1840					1845			

Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Ala	Cys	Lys	Asn	Glu	Phe	Val
1850						1855					1860			
Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala	Leu	Tyr	Glu	Glu	Pro	Asp
1865						1870					1875			
Met	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro
1880						1885					1890			
Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu	Ser	Ile	Thr	Glu	Ile	Ser
1895						1900					1905			
Asn	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Glu	Val	Val	Arg	Glu	Phe
1910						1915					1920			
Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val	Glu	Thr	Asn	Gln	Val	His
1925						1930					1935			
Asn	Trp	Asp	Pro	Val	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro
1940						1945					1950			
Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	Met	Met	Arg
1955						1960					1965			
Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Thr	Asn	Pro	Glu	Thr
1970						1975					1980			
Trp	Asp	Pro	Ser	Phe	Asp	Lys	Glu	Gly	Lys	Asp	Glu	His	Arg	Lys
1985						1990					1995			
Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met
2000						2005					2010			
Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp	Ile	Gln	Leu	Arg	His	Arg
2015						2020					2025			
Val	Glu	Ala	Thr	Ile	Ala	Phe	Ala	His	Asp	Phe	Val	Gly	Asp	Leu
2030						2035					2040			
Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr	Glu	Ile	Lys	Gln	Ser	Asp
2045						2050					2055			
Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys
2060						2065					2070			
Pro	Pro	Arg	Glu	Gln	Met	Asn	Val	Ile	Leu	Ser	Phe	Lys	His	Leu
2075						2080					2085			
Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro	Cys	Gly	Glu	Glu	Leu	Ile
2090						2095					2100			
Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr	Leu	Met	Ala	His	Val	Ser
2105						2110					2115			
Leu	His	Ala	Leu	Gln	Glu	Pro	Asp	Ala	Ala	Glu	Asn	Gln	Glu	Pro
2120						2125					2130			
Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys	Leu	Tyr	Asn	Ile	Ile	Asn
2135						2140					2145			
Thr	Val	Lys	Glu	Leu	Glu	Glu	Glu	Ala	Lys	Ala	Ile	Glu	Glu	Pro
2150						2155					2160			
Pro	Lys	Lys	Thr	Pro	Glu	Glu	Lys	Phe	Arg	Lys	Val	Leu	Ile	Gln
2165						2170					2175			
Thr	Ile	Val	Asn	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu	Thr	Pro	Lys
2180						2185					2190			
Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Val	Arg	Gln	Tyr	Asp	Ala
2195						2200					2205			
Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu	Lys	Thr	Tyr	Val	Ile	Asn
2210						2215					2220			
Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Glu	Met	Trp	Val	Gly	Leu	Ser
2225						2230					2235			
Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln	Glu	Glu	Glu
2240						2245					2250			
Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn	Asn	His	Thr
2255						2260					2265			
Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Val	Leu	Arg	Val	His	Glu
2270						2275					2280			
Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly	Arg	Arg	Ala	Gln
2285						2290					2295			

Ala	Gln	Ser	Asp	Ala	Gln	Pro	Ser	Ser	Gln	Pro	Val	Ala	Glu	Asp
2300						2305					2310			
Asn	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val	Val	Ala	Cys	Cys
2315						2320					2325			
Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg	Gln	Asn	Gln	Lys
2330						2335					2340			
Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Glu	Asn	Ser	Asn	Ile
2345						2350					2355			
Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr	Pro	Leu	Asp	Val
2360						2365					2370			
Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu	Ala	Leu	Ala	Leu
2375						2380					2385			
Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val	Tyr	Leu	Ser	Arg	Cys
2390						2395					2400			
Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu	Lys	Gly	Tyr	Pro	Asp
2405						2410					2415			
Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg	Tyr	Leu	Asp	Phe	Leu
2420						2425					2430			
Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val	Glu	Glu	Asn	Ala
2435						2440					2445			
Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro	Glu	Cys	Leu	Gly
2450						2455					2460			
Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Leu	Lys	Ala	Ile	Val
2465						2470					2475			
Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile	Ala	Asp	Arg	Arg	Lys	Leu
2480						2485					2490			
Arg	Glu	Met	Glu	Gln	Glu	Gly	Asp	Val	Asn	Phe	Ser	His	Pro	Leu
2495						2500					2505			
Pro	Glu	Ser	Asp	Glu	Asp	Glu	Asp	Tyr	Ile	Asp	Thr	Gly	Ala	Ala
2510						2515					2520			
Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val	Asp	Leu	Leu	Gly	Arg	Cys
2525						2530					2535			
Ala	Pro	Asp	Ala	Gly	Val	Ile	Ala	Leu	Gly	Lys	Asn	Glu	Ser	Leu
2540						2545					2550			
Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu	Val	Pro	Leu	Glu	Asp	Leu
2555						2560					2565			
Gln	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr	Leu	Asn	Asn	Pro	Ala	Ala
2570						2575					2580			
Gly	Glu	Glu	Arg	Pro	Lys	Ser	Asp	Met	Pro	Ser	Gly	Leu	Ile	Pro
2585						2590					2595			
Gly	His	Lys	Gln	Ser	Val	Gly	Leu	Phe	Leu	Gly	Arg	Val	Tyr	Gly
2600						2605					2610			
Ile	Glu	Thr	Gln	Glu	Leu	Phe	Tyr	Lys	Leu	Leu	Glu	Glu	Ala	Phe
2615						2620					2625			
Leu	Pro	Asp	Leu	Arg	Ala	Ala	Thr	Met	Leu	Asp	Arg	Asn	Asp	Gly
2630						2635					2640			
Cys	Glu	Ser	Asp	Met	Ala	Leu	Ser	Met	Asn	Arg	Tyr	Ile	Gly	Asn
2645						2650					2655			
Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His	Ala	Tyr	Phe	Tyr	Asn	Glu
2660						2665					2670			
Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp	Ala	Thr	Leu	His	Thr	Val
2675						2680					2685			
Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu	Thr	Lys	Gly	Gln	Arg	Glu
2690						2695					2700			
Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu	Thr	Ser	Ala	Met	Gln	Pro
2705						2710					2715			
Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys	Leu	Thr	Val	Asp	Val	Ser
2720						2725					2730			
Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu
2735						2740					2745			

His	Tyr	Glu	Arg	Cys	Ala	Lys	Tyr	Tyr	Gly	Ser	Thr	Gly	Ala	Gly
2750						2755					2760			
Gln	Gly	Ala	Phe	Gly	Ala	Ser	Ser	Asp	Glu	Glu	Lys	Arg	Leu	Thr
2765						2770					2775			
Met	Met	Leu	Phe	Ser	Ser	Ile	Phe	Asp	Ser	Leu	Ser	Lys	Met	Asp
2780						2785					2790			
Tyr	Glu	Pro	Glu	Leu	Phe	Gly	Lys	Ala	Leu	Pro	Cys	Leu	Ile	Ala
2795						2800					2805			
Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	Thr	Leu	Ser	Lys	Asn	Tyr
2810						2815					2820			
Asp	Asp	Glu	Phe	Tyr	Gly	Lys	Glu	Gln	Ala	Ala	Gly	Asp	Leu	Asp
2825						2830					2835			
Asn	Pro	Gln	Tyr	Asp	Pro	Gln	Pro	Ile	Asn	Thr	Ser	Ser	Val	Ala
2840						2845					2850			
Leu	Asn	Asn	Asp	Leu	Asn	Thr	Ile	Val	Gln	Lys	Phe	Ser	Glu	His
2855						2860					2865			
Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys	Ile	Glu	Asn	Gly	Trp	Val
2870						2875					2880			
Tyr	Gly	Glu	Gly	Trp	Ser	Asp	Ser	Gln	Lys	Thr	His	Pro	Arg	Leu
2885						2890					2895			
Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr	Glu	Lys	Glu	Arg	Tyr	Lys
2900						2905					2910			
Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp
2915						2920					2925			
Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile	Pro	Ser	Asn	Asn	Arg	Ser
2930						2935					2940			
Ser	Met	Gly	Arg	Gln	Ser	Lys	Ser	Gly	Gly	Arg	Pro	Pro	Glu	Ile
2945						2950					2955			
Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val
2960						2965					2970			
Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala
2975						2980					2985			
Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys
2990						2995					3000			
Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly	Gly	Ile	His	Pro	Gln	Leu
3005						3010					3015			
Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg
3020						3025					3030			
Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr
3035						3040					3045			
Lys	Leu	His	Arg	Pro	Ser	Lys	Ala	Pro	Gln	Ser	Asp	Thr	Glu	Gln
3050						3055					3060			
Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu
3065						3070					3075			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp	Arg	Ala	Thr	Ile	Asn	Met
3080						3085					3090			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3095						3100					3105			
Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3110						3115					3120			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3125						3130					3135			
Ala	Val	Ala	Thr	Ala	Thr	Asn	Ser	Val	Gly	Ala	Ala	Ser	Leu	Lys
3140						3145					3150			
Glu	Lys	Glu	Met	Val	Ala	Ala	Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu
3155						3160					3165			
Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3170						3175					3180			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Arg	Gly	Ile	Asp	Ala	Lys	Ser
3185						3190					3195			

Leu Val	Lys Asn Cys Pro	Glu Phe Ile Arg Thr	Ser Met Leu Thr
3200		3205	3210
Phe Phe	Asn Asn Val Ala	Asp Asp Val Gly His	Thr Ile Met Asn
3215		3220	3225
Leu Gln	Asp Gly Lys Tyr	Ala His Leu Arg Gly	Thr His Leu Lys
3230		3235	3240
Thr Ser	Thr Ser Leu Gly	Tyr Ile His Gly Val	Leu Leu Pro Ile
3245		3250	3255
Leu Thr	Ala Lys Phe Asp	His Leu Ala Asn Cys	Glu Tyr Gly Ala
3260		3265	3270
Asp Leu	Leu Leu Asp Glu	Ile Gln Val Ala Ser	Tyr Lys Met Leu
3275		3280	3285
Gly Ser	Leu Tyr Ala Leu	Gly Thr Asp Ala Ser	Leu Thr His Asp
3290		3295	3300
Arg Lys	Tyr Leu Lys Thr	Glu Ile Glu Arg His	Lys Pro Ala Leu
3305		3310	3315
Gly Ser	Cys Leu Gly Ala	Phe Ser Ser Thr Phe	Pro Val Ala Phe
3320		3325	3330
Gln Glu	Pro His Leu Asn	Lys His Asn Gln Phe	Ser Leu Leu Asn
3335		3340	3345
Arg Ile	Ala Asp His Ser	Leu Glu Ala Gln Asp	Ile Met Gln Lys
3350		3355	3360
Met Glu	Gln Cys Met Pro	Thr Leu Glu Thr Ile	Leu Gly Glu Val
3365		3370	3375
Asp Gln	Phe Val Glu Ser	Asp Lys Thr Tyr Asn	Glu Ala Pro His
3380		3385	3390
Ile Ile	Asp Val Val Leu	Pro Leu Leu Cys Ser	Tyr Leu Pro Phe
3395		3400	3405
Trp Trp	Ala Gln Gly Pro	Asp Asn Val Thr Pro	Thr Gly Gly Asn
3410		3415	3420
His Val	Thr Met Val Thr	Ala Glu His Met Asn	Gln Leu Leu Lys
3425		3430	3435
Asn Val	Leu Lys Leu Ile	Lys Lys Asn Ile Gly	Asn Glu Asn Ala
3440		3445	3450
Pro Trp	Met Thr Arg Ile	Ala Thr Tyr Thr Gln	Gln Ile Ile Ile
3455		3460	3465
Asn Ser	Ser Glu Glu Leu	Leu Arg Asp Ser Phe	Leu Pro Leu Ala
3470		3475	3480
Glu Arg	Val Arg Lys Arg	Thr Asp Asn Met Phe	His Lys Glu Glu
3485		3490	3495
Ser Leu	Arg Gly Phe Ile	Lys Ser Ser Thr Asp	Asp Thr Ser Gln
3500		3505	3510
Val Glu	Ser Gln Ile Gln	Glu Asp Trp Gln Leu	Leu Val Arg Asp
3515		3520	3525
Ile Tyr	Ser Phe Tyr Pro	Leu Leu Ile Lys Tyr	Val Asp Leu Gln
3530		3535	3540
Arg Asn	His Trp Leu Arg	Asn Asn Val Pro Glu	Ala Glu Glu Leu
3545		3550	3555
Tyr Asn	His Val Ala Glu	Ile Phe Asn Ile Trp	Ser Lys Ser Gln
3560		3565	3570
Tyr Phe	Leu Lys Glu Glu	Gln Asn Phe Ile Ser	Ala Asn Glu Ile
3575		3580	3585
Asp Asn	Met Val Leu Ile	Met Pro Thr Ala Thr	Arg Arg Val Thr
3590		3595	3600
Ala Val	Thr Asp Gly Thr	Pro Gln Gly Gly Gly	Lys Lys Lys Lys
3605		3610	3615
Lys His	Arg Asp Lys Lys	Arg Asp Lys Asp Lys	Glu Val Gln Ala
3620		3625	3630
Ser Leu	Met Val Ala Cys	Leu Lys Arg Leu Leu	Pro Val Gly Leu
3635		3640	3645



Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys
3650						3655					3660			
Asp	Arg	Phe	Leu	Lys	Val	Gly	Thr	Leu	Lys	Lys	Met	Ser	Glu	Gln
3665						3670					3675			
Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	Pro	Asp	Lys
3680						3685					3690			
Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser
3695						3700					3705			
Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	Glu	Thr	Ala
3710						3715					3720			
Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu	Arg	Ile	Val
3725						3730					3735			
Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His	Pro
3740						3745					3750			
Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser	Ile	Gln
3755						3760					3765			
Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser	Leu	His
3770						3775					3780			
Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg	Thr	Tyr
3785						3790					3795			
Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu	Asn	Ile	Arg	Gln	Glu	Val	Met
3800						3805					3810			
Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	Leu	Lys	Lys
3815						3820					3825			
Ser	Asp	Val	Val	Glu	Glu	Gly	Glu	Lys	Pro	Asp	Pro	Leu	Thr	Gln
3830						3835					3840			
Leu	Val	Thr	Thr	Ser	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	Gly
3845						3850					3855			
Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	His	Ile	Ile
3860						3865					3870			
Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu	Glu
3875						3880					3885			
Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu	Ala	Glu	Asp	Glu	Gly	Arg	Ala
3890						3895					3900			
Ser	Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His
3905						3910					3915			
Gln	Ala	Arg	Pro	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu
3920						3925					3930			
His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met	Val	Met	Lys
3935						3940					3945			
Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp
3950						3955					3960			
Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys	Lys	Asp	Val
3965						3970					3975			
Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val
3980						3985					3990			
Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu
3995						4000					4005			
Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp
4010						4015					4020			
Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys
4025						4030					4035			
Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala
4040						4045					4050			
Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr
4055						4060					4065			
Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr
4070						4075					4080			
Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe
4085						4090					4095			

Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu
4100						4105						4110		
Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala	His
4115						4120						4125		
Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser
4130						4135						4140		
His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu
4145						4150						4155		
Leu	Lys	Glu	Leu	Leu	Asn	Pro	Gln	Lys	Asp	Met	Ile	Thr	Met	Met
4160						4165						4170		
Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Val	Lys
4175						4180						4185		
Gln	Met	Val	Asp	Thr	Leu	Val	Gly	Ser	Ala	Ser	Asn	Val	Glu	Leu
4190						4195						4200		
Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr
4205						4210						4215		
Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	Asp	Gly	Trp
4220						4225						4230		
Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	Ser
4235						4240						4245		
Tyr	Xaa	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Thr
4250						4255						4260		
Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	Asp	Arg	Phe
4265						4270						4275		
His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu
4280						4285						4290		
Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg
4295						4300						4305		
Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asp	Tyr	Phe	Glu	Pro	Phe
4310						4315						4320		
Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	Ile	Glu	Arg
4325						4330						4335		
Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys
4340						4345						4350		
Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val
4355						4360						4365		
Thr	Glu	Gly	Gly	Asp	Arg	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe
4370						4375						4380		
Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met
4385						4390						4395		
Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn	Arg	Glu	Ala
4400						4405						4410		
Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Gly	Asp	Glu	Arg	Ala	Gly	Lys
4415						4420						4425		
Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln	Ser	Val	Lys	Asp	Gly	Val	Ala
4430						4435						4440		
Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro	Ser	Asn	Ile	Lys	Ala	Lys	Ile
4445						4450						4455		
Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala	Val	Gly	Phe
4460						4465						4470		
Phe	Lys	Met	Phe	Phe	Tyr	Pro	Phe	Tyr	Tyr	Leu	Gly	Tyr	Gly	Val
4475						4480						4485		
Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu	Gly	Leu	Met
4490						4495						4500		
Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro	Pro	Pro	Glu	Pro	Thr	Glu	Glu
4505						4510						4515		
Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala	Thr	Gln	Ser
4520						4525						4530		
Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp	Thr	Gly	Gln
4535						4540						4545		

Met	Gln	Val	Ser	Ala	Phe	Gly	Leu	Asp	Ile	Thr	Lys	Glu	Asp	Asn
4550						4555					4560			
Gly	Gln	Ile	Gln	Val	Lys	Pro	His	Glu	Ser	Pro	Ser	Thr	Ser	Thr
4565						4570					4575			
Pro	Ser	Ser	Gly	Gly	Glu	Ala	Glu	Val	Ser	Pro	Asp	Glu	Ser	Ala
4580						4585					4590			
Asp	His	Thr	Glu	Glu	Gln	Arg	Pro	Pro	Ser	Leu	Ile	Asp	Leu	Leu
4595						4600					4605			
Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln	Ala	Gln	Glu	Arg	Met	Glu	Ala
4610						4615					4620			
Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu	Ala	Glu	Ser
4625						4630					4635			
Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu	Ser	Gln	Val
4640						4645					4650			
Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe	Leu	Ala	Arg
4655						4660					4665			
Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe	Cys
4670						4675					4680			
Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr	Leu	Asp	Gly
4685						4690					4695			
Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile	Ala	Gly	Gly
4700						4705					4710			
Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp	Gly	Ser	Gly
4715						4720					4725			
Glu	Thr	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val	His	Ile	Asp
4730						4735					4740			
Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met	Ala	Ala	Val
4745						4750					4755			
Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly	Tyr	Tyr	His
4760						4765					4770			
Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala
4775						4780					4785			
Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	Gln	Pro	Glu
4790						4795					4800			
Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala
4805						4810					4815			
Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys
4820						4825					4830			
Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser
4835						4840					4845			
Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala	Gln	Glu	Glu
4850						4855					4860			
Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn	Ile	Asp	Trp
4865						4870					4875			
Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	Asp	Asn	Ser
4880						4885					4890			
Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn
4895						4900					4905			
Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val
4910						4915					4920			
Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn
4925						4930					4935			
Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val
4940						4945					4950			
Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr
4955						4960					4965			
Val	Gln	Gly	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys	His	Asp	Met
4970						4975					4980			
Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly
4985						4990					4995			

Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu	Pro	Pro	Asp	Gly	Asp	Asp	Ser
	5000					5005					5010			
Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp	Ile	Ser	Phe	Phe	Phe	Phe	Ile
	5015					5020					5025			
Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu	Gln	Gly	Leu	Ile	Ile	Asp	Ala
	5030					5035					5040			
Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	Glu	Asp	Met
	5045					5050					5055			
Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Asn	Lys	Asp	Tyr	Phe	Asp
	5060					5065					5070			
Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Arg	Glu	His	Asn
	5075					5080					5085			
Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro
	5090					5095					5100			
Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr
	5105					5110					5115			
Thr	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg
	5120					5125					5130			
Lys	Gln	Tyr	Glu	Asp	Leu	Met	Gly	Glu						
	5135					5140								

<210> 3  
 <211> 15845  
 <212> DNA  
 <213> Myzus persicae

<220>  
 <221> Unsure  
 <222> (36)..(37)  
 <223> n = A, C, G, or T

<220>  
 <221> misc\_feature  
 <222> (5807)  
 <223> n = a or t

<400>	3																		
ctgtccaccg	gccgtatact	atataggtcc	gatcggnact	gtgcgctttt	tattcgcaaa														60
cggacagggg	ccgagcgcg	acgagcggac	gaacgctgac	aaatgcgccg	aaatgcgccg														120
ccgcacagtg	acgcagccga	gcgcggtgtc	cgtttgaaat	attattatta	cagtcggtga														180
agagccggaa	cgagcgacga	cgtctggtcg	tccttataac	agcagaagca	gccgcacaag														240
cagccgcagc	agcagcagac	cggccaactc	gccgcgatgg	ccgacagcga	gggcagttcg														300
gaacaggacg	atgtctcggt	tctccggacg	gaagatatgg	tgtgtttatc	atgtaccgcg														360
accggagaga	gagtttgtct	tgcagcagaa	ggatttgga	atcggcattg	ttacttagaa														420
aatattgccg	ataagaatat	tccaccgat	ttatcacagt	gtgtttttgt	cattgaacaa														480
gcattatctg	tgagggcttt	acaagaatta	gtgacagctg	caagttctca	agagggaaaa														540
ggcgggaactg	gatctggaca	ccggacgtta	ctgtacggaa	atgctatatt	attgcgtcat														600
caaaatagtg	atatgtattt	agcttgtcta	tcaacaagtt	cttcaaata	taaattatct														660
tttgacggtg	gtttacaaga	gcattcacaa	ggtgaagctt	gttggtggac	tgttcacatc														720
gcattcgaacc	aacgatcaga	gggtgaaaaa	gttcagctcg	gagatgattt	aatttttagtg														780
tctgtagcaa	ctgaacggta	tttgacacac	gccaaagaaa	acgagttatc	tgtagttaat														840
gcctcatttc	atgtaactca	ttggtcagta	caaccatatg	gtactgggtat	cagcagaatg														900
aaatacgttg	gttatgtgtt	tgggtggtgac	gtactaagat	tctttcatgg	cggcgacgag														960
tgtttgacaa	taccgtcgtc	atggagcaat	gtttctggac	aaaatatagt	aatttatgaa														1020
ggcgggaagcg	ttatgagtca	agcaagatca	ttatggcggt	tggagttggc	tagaactaaa														1080
tgggcccgtg	ggttcattaa	ttggtaccat	ccaatgcgaa	taagacatct	gacaactggg														1140
cgggtatttag	gtgtcaatga	aaacaatgaa	ttgcatttag	tttgacagaga	agaagccacc														1200
actgcattctt	ctacattttt	cttacgcca	gaaaaagacg	acccaaaaat	aatttttagag														1260

gacaaagatc	tagaagtaat	tggtgcacct	ataattaagt	atggtgacag	cacagtgtta	1320
gtgcaacatt	ctgatacagg	tttatgggta	acataataagt	cttatgaaac	aaaaaaaaaa	1380
gggtgctcggt	aagtagaaga	aaaacaagca	gtattacacg	aagaaggtaa	gatggacgat	1440
gggtagact	ttagtaggag	tcaagaagaa	gagtcagaa	ctgctagagt	aatacgcaaa	1500
tgctcttcat	tattcacaca	gtttatttct	ggattggaga	acttacaag	taacaggcgt	1560
tcgtcattat	tttgttcatt	cgttaattcta	aatgaaatgg	tcatgtgtct	agaagattta	1620
ataaattact	ttgctcaacc	tgaagaggat	atggagcacg	aagaaaaaca	aaaccgattt	1680
agagcattaa	gaaatagaca	agatttattt	caagaagaag	gaatattaaa	tttaattcta	1740
gaagccattg	ataaagttaa	cattatcaca	tctcagggat	tcatggtcag	tttagccggt	1800
gatgagtctg	gacaaagtgt	ggatgtgatt	tctgggttatt	tataccagtt	gttagctgca	1860
attattaaag	gaaatcatac	caactgtgct	caatttgcta	ataactaacg	attaaattgg	1920
ttattcagcc	gtttaggatc	tcaagcatcc	agtgaaggaa	ctgggtatgtt	agatgtgctt	1980
cattgtgttc	tcatcgattc	tccagaagct	ttaaatatga	tgaaagacga	acataattaaa	2040
gttataatat	cacttttgga	aaaacatggg	cgtgatccaa	aagtgttgga	tgttttatgt	2100
tctctgtgtg	ttggtaacgg	tgtagctgta	agaagttcgc	aaaataatat	atgtgatttc	2160
ttattacaag	gaaaaaattt	acttcttcaa	accttacttg	ttgaccacgt	agcgagcgta	2220
cgctccaata	tttttgttgg	tcatgtaagt	ggatctgctg	tttatagaaa	atggtattat	2280
gaagtggcaa	tagatcatgt	agaacaaact	actcatttaa	atccgcacat	tcgcattgga	2340
tgggcaata	cagctgggta	tgttccatat	cctgggtggg	gagaaaaatg	gggcggaaac	2400
ggagttgggg	ataatttata	ctcttttgga	tttgatggat	catatttatg	gacaggagga	2460
cgtaagtcag	gagtgatgcc	cggaaacaaa	atttctaaca	ttaaaaaaag	tgatgtgatt	2520
ggctgtgcat	tagatttaac	tattccaatt	ataactttta	cattgaacgg	tcaacttgct	2580
caaggtgcct	ttagagactt	caatttagat	gggatgtttt	tcccagtaat	tagttgttcg	2640
tcaaaagtca	gttgtcgttt	tttattgggt	ggagatcacg	gtcgattgaa	gtttactcct	2700
ccagacgaat	tttctccctt	atttgaaacc	ttattacctc	aacaaatttt	gacaattgat	2760
ccttggtttt	attttgggaa	cctaaataaa	tgcgtgctca	cgggtccatg	gtatgttgaa	2820
gacggtacag	caattgttcc	aaatccagtt	gaatcttcca	tggtcacctt	gcctagttaac	2880
atagaaaata	ttaaagacaa	attagcagag	aatattcacg	aaatgtgggc	aatgaataaa	2940
attgaagctg	gttggcaata	tggcgataaa	agaaatgata	ctaggaagta	tcatccatgt	3000
ttaatacagt	ttgacaagtt	gcctccagcc	gagaagcgtt	atgattctca	attagctgtg	3060
caaacgctta	aaacggttat	tgcgttaggt	tatcacatat	ctattgataa	tccaccgtcc	3120
cgcattaaaa	cagtccgggt	gcccacgaa	ccatttatgc	aatccaatgg	atataaacca	3180
gcaccactag	atthtatctgc	tatcattttg	tcaggaaaaa	tggagaagct	aattgatcag	3240
ttagccggga	atacacataa	tctatgggca	aaagaaagaa	tacagcaagg	atggacatat	3300
ggattaaatg	aagaattaca	aatgttgctc	agtcctcatt	tagtaccgta	cagcaaagta	3360
gacgacgcta	ttaaaaaagc	taatagagat	acagcaagcg	aaacagtcgg	cacattattg	3420
gtatatgggt	acaattttaga	tcccccaact	ggagaaacaa	acgaagcgac	actcctaaca	3480
gatgacaact	ctaatagata	tttgacgttc	agaacatatc	gtgcggaaaa	aacgtatgcc	3540
gtttctagt	gaaaatggta	cttcgaattt	gagatactga	caagtggacc	tatgcggggt	3600
ggatgggcca	gggtcacatg	ttccccgggt	tatcaaactc	gcagtgatga	aaattcttgg	3660
gcatttgatg	gttataacga	agaaaaaatt	tacatgggga	cagccgaatc	atthtggtaga	3720
cagtggcaag	ttggagatgt	cgtgggagtg	tttttagatt	taatggacca	tacaataagc	3780
ttttcgatga	acggagaatt	actaatggat	acgttaggag	gggaaacaac	atttctctgaa	3840
gtccaaggag	aaggatttgt	acctgcgttt	acgttgggac	taggacaaaa	agcaaaattg	3900
acatttgggc	aagacgttaa	ctcattgaaa	tacttcacga	cttgtggact	tcaagaagga	3960
tatgaaccat	tctgtgtaaa	tatgaagagg	cctgttgctt	attgggtatac	taaggatcaa	4020
ccaatttttg	agaatactga	cgatttttctg	tctgttattg	atgttacaag	aataccagct	4080
ggttcagata	caccaccttg	tctaaagata	agtcataata	catttgaaac	catggaaaaa	4140
gccaattggg	aattttttacg	gctatcatta	cctgtcatat	gtctaccaag	ttttattggc	4200
gatcaagaaa	aacaaagggg	atggcaagaa	ataagaatta	ggcaacacag	gttattgtcg	4260
caatctgagc	atgctactcc	tgctcatatt	gaacgaatta	tgaaatcagg	atthttcaatg	4320
agtgatataa	aaggtcttca	tgcagggtat	tcagatgatc	ctggtgaaaa	tgacgaaatt	4380
atgccaaata	ctgcgccttt	accaccaaga	gggaaaaatc	aaccaccacc	accagacca	4440
ccacgaaagg	ggatcatatc	gaggcagatg	gacttaacaa	tcgaaaatga	tgggaaaattg	4500
aatcgttcat	ctagtgaact	gaatttcaac	atatataatc	atcaaaatgg	cgatggtcag	4560
gatataaaca	aagacgataa	gaaaaagaga	ggacgttctc	catttctgatt	tttctcgaga	4620
aaaaaagaag	gacctcaga	taaccgaaa	agagcaaaaa	cgccggatcc	agctaggaat	4680
gtagatagac	cacgaaatgc	tgcacacaga	cctaatacat	taaataagaa	agtaaccccc	4740
caaataagag	tttcacaaat	ggatttaaaa	ctgggtccac	cagctattcc	tgatagacca	4800
ggaggtccaa	aagcgatgtc	atthtacacct	acatcagcag	gaattgaatt	tgtgggaaat	4860

gaaatatttg	atttagaatg	tttaaaatta	ataaatgagt	attactatgg	tgtaagaata	4920
ttcccggtc	aagacctac	acatgtttac	gtgggatggg	ttactactca	atatcatctt	4980
catactaaag	atttcagcca	aaacctatgt	cgaaaaagca	ctgtaacaat	tgtcgatgaa	5040
cataatggaa	ttttagaaag	cattgatcgg	caaagttggt	atatggttcg	atccgatgaa	5100
ttgtacaatg	aagttacaaa	tgattcatca	ggaaaggcag	cctctcaagg	catgaccatt	5160
ggttggttta	ttgacatagc	tactggactg	atgtcattta	catgcgaagg	aaaagaaaact	5220
agttttaaat	ttaaaatgga	accagacatt	aagttattcc	ctgcaatatt	tgtggaagca	5280
agtagcaaag	agattttaca	aatcgaattg	ggcagaactt	caaccacact	tccattatct	5340
gcagatgtct	tacaaaattc	ggaacgtcat	gttcttccct	agtttccacc	tagattaaaa	5400
gtccaatggt	taagaccaca	tcagtgggct	agagttccaa	atgattcttt	acacattcac	5460
actctgaaat	tatctgatat	tagaggatgg	agtatactct	gtgaagatcc	agtgtcgatg	5520
attgcactac	acattcccga	agaagatcga	tgtatagata	tcttagagtt	gattgaaatg	5580
gagaaattat	tatctttcca	tgctcacaca	ttgactttgt	acgctgctgt	gtgctaccaa	5640
gccaactacc	gagctgctca	catattatgt	actcatgtaa	atcaaaaaaca	attggtatat	5700
gctatatggt	cagaatatat	gtctggtcca	ttgctgcaag	gatttttatga	tctcttaata	5760
gctttgcatt	tagagtccca	tgccacaaca	atggaggttt	gtaaaantga	atacattata	5820
cctttgggac	atgaattaac	taccttgtat	gacgatccac	aaatgggcca	tagtttacgg	5880
tcgttacaaa	cggaaatctgt	tcgacctcag	atgaaaatga	ctgaaatttc	agacgttatt	5940
gacaatgttc	gaaacttata	cagtccttat	tttccattac	aagtagtcag	agaatatgta	6000
atggctgccc	ttgaggaagc	cgtatttagtt	aaccaggttc	ataatagaga	tcccattggg	6060
ggatctaacg	aaaatttggt	tttaccgtta	ttaaaattag	tggatcgtct	tttacttgct	6120
ggtatgttac	gtgacgagga	tgctgaaaaa	ttattaataa	tgattaaccc	tgaacttggt	6180
gatcctgaat	ttcaaaaaga	tggctcctgat	gaacatagaa	aaggattatt	gcacatgaaa	6240
atggctgagg	gtgccaaaact	tcagatgtgt	tattttattac	accatttatg	tgatattcaa	6300
ctaaggcata	gggttgaatc	gataatctca	tttagttacc	aatttgtcaa	tgatatacaa	6360
atagatcaat	taagaagata	taatgaaata	aaacaatcag	atttaccatc	tgcagttgct	6420
gcaaaaaaaa	caagagagtt	ccgatgtcca	cctcgagaac	aaatgaatgc	gaatttaggt	6480
tttaaaaatt	tggacattga	tgataaagaa	aattggttga	ttggtgatga	gcttcgtgaa	6540
agaatgaacg	aatttaatat	gagactcatg	aagcaaatat	ctttagtagc	tcttcaagaa	6600
tcagaagatg	acaaatcaga	tttgaacaac	cttaacaaag	aaggtaaaat	aaaacagttc	6660
tataatttta	taaagtctgt	gaaagatgaa	gcgaatgaag	atggtcttaa	tgaacatgaa	6720
aaaaaaatc	ccgaagaaat	atttagaaaa	gttttaatat	ccactattgt	atcatgggct	6780
gaagaaaact	aaattgaaac	acaaaaatta	gttagagaaa	tgttcagttt	attagttaga	6840
caatatgata	gtgtgggaga	attgattcgc	gcgttagaga	aaacttatgt	aattaatttt	6900
aaaacaaaag	aagatgttgc	tcaaatgtgg	gttggaactta	gtcaaatccg	ttctttgttg	6960
cctgttgaaa	tgtcacaga	agaagaagaa	ttgatgcgag	aaagattatg	gaaactggta	7020
aataaccaca	acattttcca	acatcctgat	tttaataagag	ttcttcggat	gcacgaaaat	7080
gttatggccg	ttgtgatgaa	tacaccagga	aggagagctc	aagcccaatc	acaaccaggc	7140
ggaactcctg	tgacggggca	agatggagaa	attgttccaa	aagaaaagga	tacatcacat	7200
gaaatggctg	tagcttggtg	tcggttcttg	tgttattttt	gccgcacatc	caggcaaaat	7260
caaaaagcaa	tgtttgatca	tttttcattt	ttactagaaa	atagtaacat	attactttct	7320
agaccgtcat	taagaggaag	tacaccactc	gatgttgctt	actcatcgct	catggaaaat	7380
accgaacttg	cattagcggt	gagggaaacat	tatttggaat	aaatcgcgat	atatttatct	7440
cggtgtggtt	tacagtctaa	ttctgaattg	attgagaagg	gatatacctga	tttaggctgg	7500
gatccagtag	aaggagaaag	atatttagat	tttttacgat	tttgcgctcg	ggccaacggc	7560
gaaagcgtag	aggaaaaatgc	gaatttagtt	attcggttgc	ttatacgcag	gcctgaattgt	7620
ttgggccccg	cattacgagg	agaaggagaa	ggactttttac	gtgccataat	tgatgctaata	7680
aaaatgtccg	aaaggataac	agaaaggagg	aagttttttag	aagaatcagg	gaatcaagaa	7740
aatattcaac	tagatcacc	acttccggaa	tcagacgcag	atgaagatta	tattgacaca	7800
ggagctgcca	ttctgaattt	ttactgtact	cttggtgact	tactaggacg	ttatgcgcca	7860
gacagttcag	taattttcact	gggaaaaaat	gaatctttgc	gtgcaagagc	cattcttcga	7920
tcattggtac	cactcgaaga	tttcatatggt	gttcttagtc	ttagattttac	actccagaat	7980
ccagctgctg	gtcaagatag	gccaagaggt	gatatgcctt	cagggttaat	accaggacac	8040
aaacaaagca	ttgtactctt	tttagaacgt	gtgtatggta	tagaaatgca	agagttattt	8100
ttcacattac	tcgaggaggc	gttttttgcca	gatctacgta	cagcgacaat	gcttgacaga	8160
aatgatggac	ttgaatcaga	catggcattg	gcaatgaata	gatataattgg	aaagtcagta	8220
ttaccattac	tcataggtca	ttcgaaattt	tatagcgagt	ctggtaatta	tgctaatttg	8280
ttagatgcaa	cgttacacac	tgtgtataga	ttatctaaaa	atagaatgtt	aacaaaaggg	8340
cagagagaag	ctgtttcaga	cttttttggtg	gcattaacta	gccaaatgca	accaagtatg	8400
ttattaaaaac	tactgaggaa	acttacggtc	gatgtatcaa	atctatcgga	gtatacaact	8460

gtagcactta	gattgttaac	tttgcattac	gatcggtgtg	caaaatacta	tggttcaaca	8520
ggaggtcaag	gaatatacgg	agcttctagt	gacgaagaaa	agcgattaac	gatgatgtta	8580
ttcagtaaca	tatttgatct	tttgtcaaaa	atggactacg	atccagaact	ttttggaaaa	8640
gcattacctt	gtttatcagc	aattggatgt	gctttgcccc	cagattattc	attgtcaaaa	8700
aatcatgatg	atgaatggta	tggttcaaaa	cagaatattc	aaggaccttc	cgatggacct	8760
tataatccac	aaccaataaa	tacgaatagc	atcgttcttg	ataatgactt	gaactccatt	8820
gtacataagt	tctcagaaca	ttatcacgat	gcatgggcaa	atcgtaaatt	ggaaaatgga	8880
tggtgtttatg	gagaacaatt	taatgatgtc	aataaaaagtc	atcctcggct	taaaccatat	8940
atgatgttga	gtgaatatga	aaaagaactg	tacaaagaac	cagtgaagaa	gtctcttaaa	9000
gcattacttg	caataggatg	gagtattgaa	catttgacaga	acgatgcacc	tttgaacaat	9060
agaggatctg	ttagacgtca	atcaaaatcg	aatgaaaatg	ttacaccggt	tgactatcat	9120
cctaattcca	tagacatgac	taaccttaca	ctcaccagag	aaatgcaaaa	tatggcggaa	9180
agattagcag	agaactccca	tgatatttgg	gccaagaaga	agaaagaaga	agttatgttg	9240
tgtggagggg	gtattcataa	tcaattggtt	ccatatgatt	tgctaaccga	taaagaaaaag	9300
aagaaagacc	gagagcgatc	acaagagttt	cttaagtact	tgtagtacca	aggttataaa	9360
ttacacagac	caaatcgtaa	tggaggagccc	tgggaagctg	aacaattggc	tgctgcgtca	9420
acaggagaac	ttcgattttc	tcatagtttg	ctggaaaaat	tgattcatta	cattgacaga	9480
gcatacaata	atatgaaact	tttaaaacct	tccgggtacat	ttagcaggcg	ttctagtttc	9540
aaaattatgta	ctagagatat	taaatttttt	tccaaagtgtg	tgctaccatt	agttgagaaa	9600
tatttttagca	ctcatagaaa	ttacttcata	acggttgcaa	cggcttcaag	tgtcttgggc	9660
gcagcttcgt	taaaggaaaa	agaaatgggtc	gctagtttat	tttgtaagtt	agccaatctt	9720
ttgagatcta	agttaatggc	ctttggagct	gatgtccgta	taaccgtacg	atgtttacaa	9780
gtacttgtca	aagctattga	tgctaagtca	ctcgtgaaaa	actgtcctga	atttataaga	9840
acttcaatgc	ttacattttt	tcataacatt	gctgatgatt	tggaacatac	aattcaaaaat	9900
ttgcacgata	gtcgttactg	ctatctacga	ggaactcatt	tgaaaacatc	gacttcacta	9960
ttttatgtca	atgatgtaat	tttgccggtt	ttgtcatcac	tttttgatca	tttagctgca	10020
tacgaatac	gaaacgagct	attgttgaac	gaaattcaag	tagccgctta	taaaatgttg	10080
agtagtctgt	atacccttgg	tacagataca	tctttgacac	atgatagaaa	atatttaaaa	10140
gtacagtttg	aaagacatcg	tccggctttt	ggtagttgct	taggtgcatt	tagttcaacg	10200
tttcccggtg	ctttcctgga	acctcatctg	aataaacaca	accaatattc	acttcttaat	10260
cgatttcgctg	atagttcatt	ggaagctcaa	gatataatgt	caagaacgga	aggcactatg	10320
cccactcttg	aaacggtatt	aaacgaagtt	gatcagttta	tcgaatcaga	aaaaacatat	10380
acagacgcac	cacatatcat	tgatgttatt	ttgccattgt	tggtgtcata	cttaccgtac	10440
tggtgggcac	aagggtccaga	taatgttgct	ctaaccacag	gtaatcatgt	cacaatggtg	10500
actagtgaac	atatgaactg	tctattgaaa	aatgttttaa	aattaataaa	aaaaaatatt	10560
gggaacgata	atgctccttg	gatgacacaa	atagcagctt	atacacaaca	aataattatt	10620
aattcttcag	aagaattatt	aaaagatcca	ttcttaccac	ttgcggaacg	agttaaaaaa	10680
cgtacagaaa	cgttgtagca	taaagaagaa	tcgttaagag	gattttataaa	atcatctact	10740
gacgatacat	cccaaattga	agcccaaata	caagaagatt	ggcaattagt	tgtaggggat	10800
atatatgcat	tttaccctact	cttcataaaa	tacgtggatc	ttcaacgcaa	tcactgggta	10860
cgtaatagca	tatcaaatgc	tgaagattta	tacaatcacg	tatctgaaat	attcaacata	10920
tggtccaaat	ctcaataactt	tttacgagaa	gaacaaaact	ttattttctgc	gaatgaaatt	10980
gacaacatga	tacttattat	gccaacagct	acacggagat	cggctgtcat	atcagaaact	11040
tcgttaggag	gatcaacagg	aaagaaaaag	aaaaaacata	gggataaaaa	acgtgataag	11100
gaaaaagaaa	ttcaagcatc	attgatgggt	gcttgtctta	aacgattatt	gccagttggt	11160
ttaaatttgt	tcgcaggaag	agagcaagaa	ttagttcaac	actgcaagga	tagattctta	11220
aaaagaatgc	cagactatga	cgtgatacga	tttgtcaaaa	ttcaattgac	attacctgac	11280
aaattggacc	cagctgacga	aatgtccttg	caacactatt	tataactcaa	gctaggaagc	11340
aaaaaaggga	ctcctgaaat	taaacctcaa	caagtcgacg	agggtgcgga	tagaattggt	11400
gctatggcta	aagttcttta	tggattgcac	atgattgatc	atcctcagct	tcaaagcaag	11460
gcgattttatc	gatcagttgt	atcgacgcaa	cgtaagagag	ccgtaattgc	ttgtttccga	11520
caactctcac	tccacgcttt	gaccagacac	cgtgcagtaa	atatatttgt	tcgttcgttt	11580
tacgaacttt	ggcttcaaga	tgaaaatatt	gggcaagaag	tagtgattga	agatctcacg	11640
caatcgtttg	aagaagcgga	acttaaaaaa	cgtgacaagg	aagaagaaga	aggaatggca	11700
gatccactaa	atcaaatggt	cactaccttc	tgccgaggtg	ctatgactga	gagaagtggt	11760
gctttacaag	aggaccctct	ttatatgtct	tatgctgata	ttttagctaa	atcttgcggt	11820
gaagaagaag	aagaaggtta	taacgaagaa	gaaggttcta	ctggtaacgg	agaagaagaa	11880
ggcggcgctt	ctatccacga	acaagaaatg	gaaaaacaaa	aactgttggt	tcaccaagct	11940
cgattggcca	accgtgggtg	cgcagaaatg	gtattgttac	acatatcagc	ttgcaaaggt	12000
ataccgagcg	aaatggttat	gaaaacgctt	caattgggaa	tcgcagttct	acgtggtggt	12060

aatttagaaa	ttcaaattggg	tatgtttaa	cattttaaag	aaaaaaaaga	tgttggattt	12120
tttacttcag	ttgctggttt	aatgaactcg	tgcagcgttc	tcgatttgga	cgcttttgag	12180
agaaatacca	aagcggagg	tttaggagta	ggatcggaag	gtgctgctgg	tgaaaaaat	12240
atgcacgatg	ccgagtttac	gtgtacttta	ttcagattta	ttcaactaac	ttgtgaagga	12300
cataatttag	aatggcaaaa	ttattttaag	acacaagcag	gaaataccac	gactgtaaat	12360
gttgtaattt	gtacagtggg	ttattttactt	aggcttcagg	aatctataat	ggattttttat	12420
tggcattatt	cgagcaaaga	gctaattgac	ccagcaggaa	aagcaaattt	cttcaaagca	12480
atcgggtgtag	ccagcctagt	ttttaatac	ctatccgaag	taattcaagg	accgtgtact	12540
caaaatcaac	aggcccttgc	tcattccaga	ttgtgggatg	ccgttgagg	gtttttgttt	12600
ttgttttcac	acatgcaaga	taaattatcg	aaacattcta	gtcaagtaga	tttattgaaa	12660
gaacttttaa	atttacaaaa	agatatgatt	acgatgatgc	tgtccatggt	agaagggaac	12720
gttgttaatg	gaacaattgg	taaacagatg	gttgacacat	tagtagaatc	ggcgtcaaat	12780
gtcagagttga	ttttgaaata	tttcgacatg	ttcctgaaac	ttaaagattt	aactagttca	12840
acaagcttta	cggaatttga	ccccacaat	gatggttggg	tacatccaaa	agattttaaa	12900
gaaaaaatgg	aacaacaaaa	aagttacact	gcagaggaaa	ttgaattttat	gttacaatgt	12960
tgtgaatcta	atcacgatgg	gaaaattgat	tacattggct	ttaccgatca	attccacgag	13020
ccatccaaag	aaattggttt	caatcttgcc	gttttgttga	ctaacctatc	agaacacatg	13080
ccaaatgaac	ctaggttaac	gagattctta	gaaacagcta	gcagtgtttt	gaattatttc	13140
cagccatttc	ttggaagaat	tgaaattctc	ggagggaagta	aacgcataga	acgggtgtac	13200
tttgaaatta	aggaatcaaa	catcgaacag	tggttaaaac	cacaaattag	ggaatcaaaa	13260
cgtgcgttct	tttattcaat	cgtcacagaa	ggtggtgata	aagagaagtt	agaagcattt	13320
gttaatttct	gcgaagacgc	tatatgtgaa	atgcaacacg	ccagtgggtct	tatggcagtt	13380
gatgatgggt	ccggtatagg	tgggtgaaaa	tctagaaaaa	catcgtacac	ttatcttgca	13440
gacgacgaag	agaacaagac	ggcgaaagat	cccattcgaa	gaggtataca	ggccatcaaa	13500
tatggattcc	atctactggt	cttcgtgttg	tcaccacaaa	atattaaaaa	caaaatcaat	13560
gaaattcaac	aaatgagtg	cattgaactg	attacttcat	ttttcaaact	gtgggtttat	13620
ttaatttct	acactggata	tagtggagtt	tacgttttaa	ggtatatatc	tcgtattctc	13680
atgcaactta	tgagtggcac	acaatccgaa	gaaacaactg	tagaagtgg	agaagaaaag	13740
agtggatcgt	tcagaatgct	gcctgcatta	ccatcttcgg	gaatagacga	aacaccgtca	13800
acccttacag	atagcaataa	tatgaggaaa	aattctggct	cgcttgattc	caaacattta	13860
aaatcaacca	caggtggtga	cgataaagac	gagacatcgg	cagaaaacca	cgaaaaagaa	13920
gacggcgtgg	atggctcgga	actacaagcg	tcgtttgttg	atctattagt	aggcgaatcg	13980
gctagaaaag	attctattgc	cggccccgaa	gttttggttc	aacaacaagc	tgttatggca	14040
gcagtagaag	cagaaatcaa	acaaaagaac	tctgtcgaaa	atcctagtgc	attttccacg	14100
atcgatatca	acgcatacac	gcaccgtgca	ttgagttttt	tggaagaaa	ctttttataat	14160
ttaaaataac	tcgcactagt	gttagcgttc	tgcatttaatt	tcatactgct	gttttacaag	14220
gtgaccactc	tggctgatga	tttatcgagc	gacggagatg	tgaaggagtt	tgcactgggt	14280
tcggctggca	taagcaatga	cgacatcgac	gattcaataa	gcacagaaat	ggccgacgac	14340
gatggagcat	tggaaactcg	gcacgtcaat	gaggacttct	tttacctggc	acacgttatg	14400
cggcttgacg	ctttgctcca	ctctctagcc	tcattggcca	tgttgatagc	atattaccat	14460
cttaaagtgc	cattggccat	attcaaacgg	gaaaaggaaa	ttgccagaag	attagaattc	14520
gacggcctct	acattggtga	acagccggaa	gatgatgaca	taaaatcaca	ctgggacaag	14580
ttggtgattt	ccgctaagtc	atttccagtt	aattattggg	acaagtttgc	gaagaaaaaa	14640
gttcgccaaa	agtatagcga	gacgtacgat	tttgattcca	taagtaattc	gttgggcatg	14700
gagaagacat	cgttttagcac	tcaggaaaat	gaagaacgga	ccggcttaat	aaattttgtt	14760
attaatatcg	actggaggta	tcaagtgttg	aaagctgggg	tcacaatcac	agacaacgca	14820
tttctgtaca	gtctgtggta	tttcacattt	tcgattctgg	gaaactttta	caacttcttt	14880
tttgctgctc	atctactgga	cgtagctggt	ggattcaaaa	cacttagaac	tatcttacag	14940
tctgtaactc	ataacggaaa	acagctggta	ttgaccgtct	tgctcttgac	gatcattgtg	15000
tacatatata	cggtcattgc	atttaacttc	ttcaggaagt	tctacgtgca	agaagaagac	15060
gacgaagtgg	ataaaaaaatg	tcacgacatg	ttgacgtggt	tcgtgttcca	tctatacaaa	15120
ggtgtgagag	ccggtggcgg	tatcggagac	gaaattggat	caccgcagcg	cgacgactac	15180
gaagtttaca	gaataatggt	tgacatcacg	ttcttcttct	ttgtcatcat	tatacttttg	15240
gccattcttc	aaggtttgat	cattgacgcg	ttcggagagc	tgcgtgacca	gctggaaaagc	15300
gtcaaggagg	acatggagtc	caattgtttc	atttgcggta	tcggcaaaga	ttatttcgac	15360
aaagtgccgc	atggtttcga	cactcacgta	caagaagaac	acaacctcgc	caactacatg	15420
tttttccctaa	tgcatttgat	caacaaaccg	gacacagaat	atacaggtca	agaaacgtac	15480
gtgtggaaca	tgtaccagca	acggtgttgg	gacttcttcc	cagtgggaga	ctgtttccgc	15540
aaacagtagc	aagaggagct	cggcggcgga	ggaggcgtct	gataatagtg	tttttgtgtt	15600
tgattggggc	ccggaaaatat	ataatctggt	gtgtttttatt	acgcgcaact	gtttctcgac	15660



```

catggctgta taatagtcac cgtccgtggc cattattatt attactttta ttataaatca 15720
attaaaaatat tatttcgctg ttcgctgttc gattttctca gtagaaacgt atcatatatt 15780
atagatcaaaa gcatattata agttatatta aacaaaacat aaaaaaaaaa aaaaaataaa 15840
aaaaa 15845

```

```

<210> 4
<211> 5101
<212> PRT
<213> Myzus persicae

```

```

<400> 4
Met Ala Asp Ser Glu Gly Ser Ser Glu Gln Asp Asp Val Ser Phe Leu
1 5 10 15

Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg
20 25 30

Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Tyr Leu Glu
35 40 45

Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe
50 55 60

Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr
65 70 75 80

Ala Ala Ser Ser Gln Glu Gly Lys Gly Gly Thr Gly Ser Gly His Arg
85 90 95

Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln Asn Ser Asp
100 105 110

Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser
115 120 125

Phe Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp
130 135 140

Thr Val His Pro Ala Ser Asn Gln Arg Ser Glu Gly Glu Lys Val Pro
145 150 155 160

Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu
165 170 175

His Thr Ala Lys Glu Asn Glu Leu Ser Val Val Asn Ala Ser Phe His
180 185 190

Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met
195 200 205

Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His
210 215 220

Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Ser Trp Ser Asn Val Ser
225 230 235 240

Gly Gln Asn Ile Val Ile Tyr Glu Gly Gly Ser Val Met Ser Gln Ala
245 250 255

```

Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Ala	Gly	Gly	
			260					265						270		
Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Leu	Thr	Thr	Gly	
		275					280					285				
Arg	Tyr	Leu	Gly	Val	Asn	Glu	Asn	Asn	Glu	Leu	His	Leu	Val	Cys	Arg	
	290					295					300					
Glu	Glu	Ala	Thr	Thr	Ala	Ser	Ser	Thr	Phe	Phe	Leu	Arg	Gln	Glu	Lys	
305					310					315					320	
Asp	Asp	Gln	Lys	Ile	Ile	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	
			325						330					335		
Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	Leu	Val	Gln	His	Ser	
			340					345					350			
Asp	Thr	Gly	Leu	Trp	Leu	Thr	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	
		355					360					365				
Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Val	Leu	His	Glu	Glu	Gly	
	370					375					380					
Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	
385					390					395					400	
Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	
				405					410					415		
Ile	Ser	Gly	Leu	Glu	Asn	Leu	Gln	Ser	Asn	Arg	Arg	Ser	Ser	Leu	Phe	
			420					425					430			
Cys	Ser	Phe	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	
		435					440					445				
Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Glu	Glu	Asp	Met	Glu	His	Glu	Glu	Lys	
	450					455					460					
Gln	Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	
465					470					475					480	
Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Val	Asn	Ile	
				485					490					495		
Ile	Thr	Ser	Gln	Gly	Phe	Met	Val	Ser	Leu	Ala	Gly	Asp	Glu	Ser	Gly	
			500					505					510			
Gln	Ser	Trp	Asp	Val	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	
		515					520					525				
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Thr	Asn	
	530					535					540					
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	
545					550					555					560	
Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro	
				565					570					575		

Glu Ala Leu Asn Met Met Lys Asp Glu His Ile Lys Val Ile Ile Ser  
 580 585 590  
 Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys  
 595 600 605  
 Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn  
 610 615 620  
 Ile Cys Asp Phe Leu Leu Gln Gly Lys Asn Leu Leu Leu Gln Thr Leu  
 625 630 635 640  
 Leu Val Asp His Val Ala Ser Val Arg Pro Asn Ile Phe Val Gly His  
 645 650 655  
 Val Ser Gly Ser Ala Val Tyr Arg Lys Trp Tyr Tyr Glu Val Ala Ile  
 660 665 670  
 Asp His Val Glu Gln Thr Thr His Leu Asn Pro His Ile Arg Ile Gly  
 675 680 685  
 Trp Ala Asn Thr Ala Gly Tyr Val Pro Tyr Pro Gly Gly Gly Glu Lys  
 690 695 700  
 Trp Gly Gly Asn Gly Val Gly Asp Asn Leu Tyr Ser Phe Gly Phe Asp  
 705 710 715 720  
 Gly Ser Tyr Leu Trp Thr Gly Gly Arg Lys Ser Gly Val Met Pro Gly  
 725 730 735  
 Thr Gln Ile Ser Asn Ile Lys Lys Ser Asp Val Ile Gly Cys Ala Leu  
 740 745 750  
 Asp Leu Thr Ile Pro Ile Ile Thr Phe Thr Leu Asn Gly Gln Leu Val  
 755 760 765  
 Gln Gly Ala Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val  
 770 775 780  
 Ile Ser Cys Ser Ser Lys Val Ser Cys Arg Phe Leu Leu Gly Gly Asp  
 785 790 795 800  
 His Gly Arg Leu Lys Phe Thr Pro Pro Asp Glu Phe Ser Pro Leu Phe  
 805 810 815  
 Glu Thr Leu Leu Pro Gln Gln Ile Leu Thr Ile Asp Pro Cys Phe Tyr  
 820 825 830  
 Phe Gly Asn Leu Asn Lys Cys Val Leu Thr Gly Pro Trp Tyr Val Glu  
 835 840 845  
 Asp Gly Thr Ala Phe Val Pro Asn Pro Val Asp Thr Ser Met Val Thr  
 850 855 860  
 Leu Pro Ser Tyr Ile Glu Asn Ile Lys Asp Lys Leu Ala Glu Asn Ile  
 865 870 875 880  
 His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Gln Tyr Gly  
 885 890 895

Asp Lys Arg Asn Asp Thr Arg Lys Tyr His Pro Cys Leu Ile Gln Phe  
 900 905 910  
 Asp Lys Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ser Gln Leu Ala Val  
 915 920 925  
 Gln Thr Leu Lys Thr Val Ile Ala Leu Gly Tyr His Ile Ser Ile Asp  
 930 935 940  
 Asn Pro Pro Ser Arg Ile Lys Thr Val Arg Leu Pro Asn Glu Pro Phe  
 945 950 955 960  
 Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Ile  
 965 970 975  
 Ile Leu Ser Gly Lys Met Glu Glu Leu Ile Asp Gln Leu Ala Gly Asn  
 980 985 990  
 Thr His Asn Leu Trp Ala Lys Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
 995 1000 1005  
 Gly Leu Asn Glu Glu Leu Gln Met Leu Arg Ser Pro His Leu Val  
 1010 1015 1020  
 Pro Tyr Ser Lys Val Asp Asp Ala Ile Lys Lys Ala Asn Arg Asp  
 1025 1030 1035  
 Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly Tyr Asn  
 1040 1045 1050  
 Leu Asp Pro Pro Thr Gly Glu Thr Asn Glu Ala Thr Leu Leu Thr  
 1055 1060 1065  
 Asp Asp Asn Ser Asn Arg Tyr Leu Thr Phe Arg Thr Tyr Arg Ala  
 1070 1075 1080  
 Glu Lys Thr Tyr Ala Val Ser Ser Gly Lys Trp Tyr Phe Glu Phe  
 1085 1090 1095  
 Glu Ile Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Phe  
 1100 1105 1110  
 Thr Cys Ser Pro Gly Tyr Gln Ile Gly Ser Asp Glu Asn Ser Trp  
 1115 1120 1125  
 Ala Phe Asp Gly Tyr Asn Glu Glu Lys Ile Tyr Met Gly Thr Ala  
 1130 1135 1140  
 Glu Ser Phe Gly Arg Gln Trp Gln Val Gly Asp Val Val Gly Val  
 1145 1150 1155  
 Phe Leu Asp Leu Met Asp His Thr Ile Ser Phe Ser Met Asn Gly  
 1160 1165 1170  
 Glu Leu Leu Met Asp Thr Leu Gly Gly Glu Thr Thr Phe Ser Glu  
 1175 1180 1185  
 Val Gln Gly Glu Gly Phe Val Pro Ala Phe Thr Leu Gly Leu Gly  
 1190 1195 1200

Gln Lys	Ala Lys	Leu Thr	Phe	Gly Gln	Asp Val	Asn	Ser Leu	Lys	
1205			1210			1215			
Tyr Phe	Thr Thr	Cys Gly	Leu	Gln Glu	Gly Tyr	Glu	Pro Phe	Cys	
1220			1225			1230			
Val Asn	Met Lys	Arg Pro	Val	Ala Tyr	Trp Tyr	Thr	Lys Asp	Gln	
1235			1240			1245			
Pro Ile	Phe Glu	Asn Thr	Asp	Asp Phe	Ser Ser	Val	Ile Asp	Val	
1250			1255			1260			
Thr Arg	Ile Pro	Ala Gly	Ser	Asp Thr	Pro Pro	Cys	Leu Lys	Ile	
1265			1270			1275			
Ser His	Asn Thr	Phe Glu	Thr	Met Glu	Lys Ala	Asn	Trp Glu	Phe	
1280			1285			1290			
Leu Arg	Leu Ser	Leu Pro	Val	Ile Cys	Leu Pro	Ser	Phe Ile	Gly	
1295			1300			1305			
Asp Gln	Glu Lys	Gln Arg	Gly	Trp Gln	Glu Ile	Arg	Ile Arg	Gln	
1310			1315			1320			
His Arg	Leu Leu	Ser Gln	Ser	Glu His	Ala Thr	Pro	Ala His	Ile	
1325			1330			1335			
Glu Arg	Ile Met	Lys Ser	Gly	Phe Ser	Met Ser	Asp	Ile Lys	Gly	
1340			1345			1350			
Leu His	Arg Gly	Tyr Ser	Asp	Asp Pro	Val Glu	Asn	Asp Glu	Ile	
1355			1360			1365			
Met Pro	Asn Thr	Ala Pro	Leu	Pro Pro	Arg Gly	Lys	Asn Gln	Pro	
1370			1375			1380			
Pro Pro	Pro Arg	Pro Pro	Arg	Lys Gly	Ser Leu	Ser	Arg His	Asp	
1385			1390			1395			
Asp Leu	Thr Ile	Glu Asn	Asp	Gly Lys	Leu Asn	Arg	Ser Ser	Ser	
1400			1405			1410			
Glu Leu	Asn Phe	Asn Ile	Tyr	Asn His	Gln Asn	Gly	Asp Gly	Gln	
1415			1420			1425			
Asp Ile	Asn Lys	Asp Asp	Lys	Lys Lys	Arg Gly	Arg	Ser Pro	Phe	
1430			1435			1440			
Arg Phe	Phe Ser	Arg Lys	Lys	Glu Gly	Pro Ser	Asp	Asn Pro	Lys	
1445			1450			1455			
Arg Ala	Lys Thr	Pro Asp	Pro	Ala Arg	Asn Val	Asp	Arg Pro	Arg	
1460			1465			1470			
Asn Ala	Ala His	Arg Pro	Asn	Thr Leu	Asn Glu	Arg	Val Thr	Pro	
1475			1480			1485			
Gln Ile	Arg Val	Ser Gln	Met	Asp Leu	Lys Leu	Val	Pro Pro	Ala	
1490			1495			1500			

Ile	Pro	Asp	Arg	Pro	Gly	Gly	Pro	Lys	Ala	Met	Ser	Phe	Thr	Pro
1505						1510					1515			
Thr	Ser	Ala	Gly	Ile	Glu	Phe	Val	Gly	Asn	Glu	Ile	Phe	Asp	Leu
1520						1525					1530			
Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Tyr	Tyr	Gly	Val	Arg	Ile
1535						1540					1545			
Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val	Gly	Trp	Val	Thr
1550						1555					1560			
Thr	Gln	Tyr	His	Leu	His	Thr	Lys	Asp	Phe	Ser	Gln	Asn	His	Val
1565						1570					1575			
Arg	Lys	Ser	Thr	Val	Thr	Ile	Val	Asp	Glu	His	Asn	Gly	Ile	Leu
1580						1585					1590			
Glu	Ser	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Met	Val	Arg	Ser	Asp	Glu
1595						1600					1605			
Leu	Tyr	Asn	Glu	Val	Thr	Asn	Asp	Ser	Ser	Gly	Lys	Ala	Ala	Ser
1610						1615					1620			
Gln	Gly	Met	Thr	Ile	Gly	Cys	Phe	Ile	Asp	Ile	Ala	Thr	Gly	Leu
1625						1630					1635			
Met	Ser	Phe	Thr	Cys	Glu	Gly	Lys	Glu	Thr	Ser	Phe	Lys	Phe	Lys
1640						1645					1650			
Met	Glu	Pro	Asp	Ile	Lys	Leu	Phe	Pro	Ala	Ile	Phe	Val	Glu	Ala
1655						1660					1665			
Ser	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	Arg	Thr	Ser	Thr
1670						1675					1680			
Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Gln	Asn	Ser	Glu	Arg	His
1685						1690					1695			
Val	Leu	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	Arg
1700						1705					1710			
Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Asp	Ser	Leu	His	Ile	His
1715						1720					1725			
Thr	Leu	Lys	Leu	Ser	Asp	Ile	Arg	Gly	Trp	Ser	Ile	Leu	Cys	Glu
1730						1735					1740			
Asp	Pro	Val	Ser	Met	Ile	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	Arg
1745						1750					1755			
Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Glu	Lys	Leu	Leu	Ser
1760						1765					1770			
Phe	His	Ala	His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	Val	Cys	Tyr	Gln
1775						1780					1785			
Ala	Asn	Tyr	Arg	Ala	Ala	His	Ile	Leu	Cys	Thr	His	Val	Asn	Gln
1790						1795					1800			

Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Cys	Ser	Glu	Tyr	Met	Ser	Gly	Pro
1805						1810					1815			
Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu
1820						1825					1830			
Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Ile	Glu	Tyr	Ile	Ile
1835						1840					1845			
Pro	Leu	Gly	His	Glu	Leu	Thr	Thr	Leu	Tyr	Asp	Asp	Pro	Gln	Met
1850						1855					1860			
Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro	Gln
1865						1870					1875			
Met	Lys	Met	Thr	Glu	Ile	Ser	Asp	Val	Ile	Asp	Asn	Val	Arg	Asn
1880						1885					1890			
Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Gln	Val	Val	Arg	Glu	Tyr	Val
1895						1900					1905			
Met	Ala	Ala	Leu	Glu	Glu	Ala	Val	Leu	Val	Asn	Gln	Val	His	Asn
1910						1915					1920			
Arg	Asp	Pro	Ile	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro	Leu
1925						1930					1935			
Leu	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	Met	Leu	Arg	Asp
1940						1945					1950			
Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Ile	Asn	Pro	Glu	Thr	Trp
1955						1960					1965			
Asp	Pro	Glu	Phe	Gln	Lys	Asp	Gly	Pro	Asp	Glu	His	Arg	Lys	Gly
1970						1975					1980			
Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys
1985						1990					1995			
Tyr	Leu	Leu	His	His	Leu	Cys	Asp	Ile	Gln	Leu	Arg	His	Arg	Val
2000						2005					2010			
Glu	Ser	Ile	Ile	Ser	Phe	Ser	Tyr	Gln	Phe	Val	Asn	Asp	Ile	Gln
2015						2020					2025			
Ile	Asp	Gln	Leu	Arg	Arg	Tyr	Asn	Glu	Ile	Lys	Gln	Ser	Asp	Leu
2030						2035					2040			
Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro
2045						2050					2055			
Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	Leu	Gly	Phe	Lys	Asn	Leu	Asp
2060						2065					2070			
Ile	Asp	Asp	Lys	Glu	Asn	Cys	Leu	Ile	Gly	Asp	Glu	Leu	Arg	Glu
2075						2080					2085			
Arg	Met	Asn	Glu	Phe	Asn	Glu	Arg	Leu	Met	Lys	Gln	Ile	Ser	Leu
2090						2095					2100			

Val	Ala	Leu	Gln	Glu	Ser	Glu	Asp	Asp	Lys	Ser	Asp	Leu	Asn	Asn
2105						2110					2115			
Leu	Asn	Lys	Glu	Gly	Lys	Ile	Lys	Gln	Phe	Tyr	Asn	Phe	Ile	Asn
2120						2125					2130			
Ala	Val	Lys	Asp	Glu	Ala	Asn	Glu	Asp	Gly	Leu	Asn	Glu	His	Glu
2135						2140					2145			
Lys	Lys	Ile	Pro	Glu	Glu	Ile	Phe	Arg	Lys	Val	Leu	Ile	Ser	Thr
2150						2155					2160			
Ile	Val	Ser	Trp	Ala	Glu	Glu	Thr	Gln	Ile	Glu	Thr	Pro	Lys	Leu
2165						2170					2175			
Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Val	Arg	Gln	Tyr	Asp	Ser	Val
2180						2185					2190			
Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu	Lys	Thr	Tyr	Val	Ile	Asn	Phe
2195						2200					2205			
Lys	Thr	Lys	Glu	Asp	Val	Ala	Gln	Met	Trp	Val	Gly	Leu	Ser	Gln
2210						2215					2220			
Ile	Arg	Ser	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln	Glu	Glu	Glu	Glu
2225						2230					2235			
Leu	Met	Arg	Glu	Arg	Leu	Trp	Lys	Leu	Val	Asn	Asn	His	Thr	Phe
2240						2245					2250			
Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Val	Leu	Arg	Met	His	Glu	Asn
2255						2260					2265			
Val	Met	Ala	Val	Val	Met	Asn	Thr	Pro	Gly	Arg	Arg	Ala	Gln	Ala
2270						2275					2280			
Gln	Ser	Gln	Pro	Gly	Gly	Thr	Pro	Val	Thr	Gly	Gln	Asp	Gly	Glu
2285						2290					2295			
Ile	Val	Pro	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val	Val	Ala
2300						2305					2310			
Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Ser	Arg	Gln	Asn
2315						2320					2325			
Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Ser	Phe	Leu	Leu	Glu	Asn	Ser
2330						2335					2340			
Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr	Pro	Leu
2345						2350					2355			
Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu	Ala	Leu
2360						2365					2370			
Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Ile	Tyr	Leu	Ser
2375						2380					2385			
Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Ile	Glu	Lys	Gly	Tyr
2390						2395					2400			



Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg	Tyr	Leu	Asp
2405						2410					2415			
Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val	Glu	Glu
2420						2425					2430			
Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro	Glu	Cys
2435						2440					2445			
Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Leu	Arg	Ala
2450						2455					2460			
Ile	Ile	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile	Thr	Glu	Arg	Arg
2465						2470					2475			
Lys	Phe	Leu	Glu	Glu	Ser	Gly	Asn	Gln	Glu	Asn	Ile	Gln	Leu	Asp
2480						2485					2490			
His	Pro	Leu	Pro	Glu	Ser	Asp	Asp	Asp	Glu	Asp	Tyr	Ile	Asp	Thr
2495						2500					2505			
Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val	Asp	Leu	Leu
2510						2515					2520			
Gly	Arg	Tyr	Ala	Pro	Asp	Ser	Ser	Val	Ile	Ser	Leu	Gly	Lys	Asn
2525						2530					2535			
Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu	Val	Pro	Leu
2540						2545					2550			
Glu	Asp	Leu	His	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr	Leu	Gln	Asn
2555						2560					2565			
Pro	Ala	Ala	Gly	Gln	Asp	Arg	Pro	Lys	Ser	Asp	Met	Pro	Ser	Gly
2570						2575					2580			
Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Ile	Val	Leu	Phe	Leu	Glu	Arg
2585						2590					2595			
Val	Tyr	Gly	Ile	Glu	Met	Gln	Glu	Leu	Phe	Phe	Thr	Leu	Leu	Glu
2600						2605					2610			
Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr	Met	Leu	Asp	Arg
2615						2620					2625			
Asn	Asp	Gly	Leu	Glu	Ser	Asp	Met	Ala	Leu	Ala	Met	Asn	Arg	Tyr
2630						2635					2640			
Ile	Gly	Lys	Ser	Val	Leu	Pro	Leu	Leu	Ile	Gly	His	Ser	Lys	Phe
2645						2650					2655			
Tyr	Ser	Glu	Ser	Gly	Asn	Tyr	Ala	Asn	Leu	Leu	Asp	Ala	Thr	Leu
2660						2665					2670			
His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu	Thr	Lys	Gly
2675						2680					2685			
Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu	Thr	Ser	Gln
2690						2695					2700			

Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys	Leu	Thr	Val
2705						2710					2715			
Asp	Val	Ser	Asn	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala	Leu	Arg	Leu
2720						2725					2730			
Leu	Thr	Leu	His	Tyr	Asp	Arg	Cys	Ala	Lys	Tyr	Tyr	Gly	Ser	Thr
2735						2740					2745			
Gly	Gly	Gln	Gly	Ile	Tyr	Gly	Ala	Ser	Ser	Asp	Glu	Glu	Lys	Arg
2750						2755					2760			
Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	Phe	Asp	Ser	Leu	Ser	Lys
2765						2770					2775			
Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala	Leu	Pro	Cys	Leu
2780						2785					2790			
Ser	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	Ser	Leu	Ser	Lys
2795						2800					2805			
Asn	His	Asp	Asp	Glu	Trp	Tyr	Gly	Ser	Lys	Gln	Asn	Ile	Gln	Gly
2810						2815					2820			
Pro	Ser	Asp	Gly	Pro	Tyr	Asn	Pro	Gln	Pro	Ile	Asn	Thr	Asn	Ser
2825						2830					2835			
Ile	Val	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Ile	Val	His	Lys	Phe	Ser
2840						2845					2850			
Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Asn	Arg	Lys	Leu	Glu	Asn	Gly
2855						2860					2865			
Trp	Val	Tyr	Gly	Glu	Gln	Phe	Asn	Asp	Val	Asn	Lys	Ser	His	Pro
2870						2875					2880			
Arg	Leu	Lys	Pro	Tyr	Met	Met	Leu	Ser	Glu	Tyr	Glu	Lys	Glu	Leu
2885						2890					2895			
Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu	Leu	Ala	Ile
2900						2905					2910			
Gly	Trp	Ser	Ile	Glu	His	Ser	Glu	Asn	Asp	Ala	Pro	Leu	Asn	Asn
2915						2920					2925			
Arg	Gly	Ser	Val	Arg	Arg	Gln	Ser	Lys	Ser	Asn	Glu	Asn	Val	Thr
2930						2935					2940			
Pro	Phe	Asp	Tyr	His	Pro	Asn	Pro	Ile	Asp	Met	Thr	Asn	Leu	Thr
2945						2950					2955			
Leu	Thr	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn
2960						2965					2970			
Ser	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Val	Met	Leu
2975						2980					2985			
Cys	Gly	Gly	Gly	Ile	His	Asn	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu
2990						2995					3000			

Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe
3005						3010					3015			
Leu	Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Asn
3020						3025					3030			
Arg	Asn	Gly	Gly	Pro	Ser	Glu	Ala	Glu	Gln	Leu	Ala	Ala	Ala	Ser
3035						3040					3045			
Thr	Gly	Glu	Leu	Arg	Phe	Ser	His	Ser	Leu	Leu	Glu	Lys	Leu	Ile
3050						3055					3060			
His	Tyr	Ile	Asp	Arg	Ala	Ser	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro
3065						3070					3075			
Ser	Gly	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Ile	Cys	Thr	Arg
3080						3085					3090			
Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Val	Glu	Lys
3095						3100					3105			
Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Thr	Val	Ala	Thr	Ala
3110						3115					3120			
Ser	Ser	Val	Leu	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val
3125						3130					3135			
Ala	Ser	Leu	Phe	Cys	Lys	Leu	Ala	Asn	Leu	Leu	Arg	Ser	Lys	Leu
3140						3145					3150			
Met	Ala	Phe	Gly	Ala	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln
3155						3160					3165			
Val	Leu	Val	Lys	Ala	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys
3170						3175					3180			
Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	His	Asn	Ile
3185						3190					3195			
Ala	Asp	Asp	Leu	Glu	His	Thr	Ile	Gln	Asn	Leu	His	Asp	Ser	Arg
3200						3205					3210			
Tyr	Cys	Tyr	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu
3215						3220					3225			
Phe	Tyr	Val	Asn	Asp	Val	Ile	Leu	Pro	Val	Leu	Ser	Ser	Leu	Phe
3230						3235					3240			
Asp	His	Leu	Ala	Ala	Tyr	Glu	Tyr	Gly	Asn	Glu	Leu	Leu	Leu	Asn
3245						3250					3255			
Glu	Ile	Gln	Val	Ala	Ala	Tyr	Lys	Met	Leu	Ser	Ser	Leu	Tyr	Thr
3260						3265					3270			
Leu	Gly	Thr	Asp	Thr	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys
3275						3280					3285			
Val	Gln	Leu	Glu	Arg	His	Arg	Pro	Ala	Phe	Gly	Ser	Cys	Leu	Gly
3290						3295					3300			

Ala	Phe	Ser	Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu
3305						3310					3315			
Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg	Phe	Ala	Asp	Ser
3320						3325					3330			
Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Ser	Arg	Thr	Glu	Gly	Thr	Met
3335						3340					3345			
Pro	Thr	Leu	Glu	Thr	Val	Leu	Asn	Glu	Val	Asp	Gln	Phe	Ile	Glu
3350						3355					3360			
Ser	Glu	Lys	Thr	Tyr	Thr	Asp	Ala	Pro	His	Ile	Ile	Asp	Val	Ile
3365						3370					3375			
Leu	Pro	Leu	Leu	Cys	Ser	Tyr	Leu	Pro	Tyr	Trp	Trp	Ala	Gln	Gly
3380						3385					3390			
Pro	Asp	Asn	Val	Ala	Leu	Thr	Thr	Gly	Asn	His	Val	Thr	Met	Val
3395						3400					3405			
Thr	Ser	Glu	His	Met	Asn	Cys	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu
3410						3415					3420			
Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala	Pro	Trp	Met	Thr	Gln
3425						3430					3435			
Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu
3440						3445					3450			
Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Lys	Lys
3455						3460					3465			
Arg	Thr	Glu	Thr	Leu	Tyr	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe
3470						3475					3480			
Ile	Lys	Ser	Ser	Thr	Asp	Asp	Thr	Ser	Gln	Ile	Glu	Ala	Gln	Ile
3485						3490					3495			
Gln	Glu	Asp	Trp	Gln	Leu	Val	Val	Arg	Asp	Ile	Tyr	Ala	Phe	Tyr
3500						3505					3510			
Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu
3515						3520					3525			
Arg	Asn	Ser	Ile	Ser	Asn	Ala	Glu	Asp	Leu	Tyr	Asn	His	Val	Ser
3530						3535					3540			
Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Arg	Glu
3545						3550					3555			
Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Ile	Leu
3560						3565					3570			
Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala	Val	Ile	Ser	Glu	Thr
3575						3580					3585			
Ser	Leu	Gly	Gly	Ser	Thr	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp
3590						3595					3600			

Lys	Lys	Arg	Asp	Lys	Glu	Lys	Glu	Ile	Gln	Ala	Ser	Leu	Met	Val
3605						3610					3615			
Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala
3620						3625					3630			
Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu
3635						3640					3645			
Lys	Arg	Met	Pro	Asp	Tyr	Asp	Val	Ile	Arg	Phe	Val	Lys	Ile	Gln
3650						3655					3660			
Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp
3665						3670					3675			
Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Lys	Gly	Thr	Pro
3680						3685					3690			
Glu	Ile	Lys	Pro	Gln	Gln	Val	Asp	Glu	Val	Ala	Asp	Arg	Ile	Val
3695						3700					3705			
Ala	Met	Ala	Lys	Val	Leu	Tyr	Gly	Leu	His	Met	Ile	Asp	His	Pro
3710						3715					3720			
Gln	Leu	Gln	Ser	Lys	Ala	Ile	Tyr	Arg	Ser	Val	Val	Ser	Thr	Gln
3725						3730					3735			
Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Leu	Ser	Leu	His
3740						3745					3750			
Ala	Leu	Thr	Arg	His	Arg	Ala	Val	Asn	Ile	Phe	Val	Arg	Ser	Phe
3755						3760					3765			
Tyr	Glu	Leu	Trp	Leu	Gln	Asp	Glu	Asn	Ile	Gly	Gln	Glu	Val	Val
3770						3775					3780			
Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Glu	Ala	Glu	Leu	Lys	Lys
3785						3790					3795			
Arg	Asp	Lys	Glu	Glu	Glu	Glu	Gly	Met	Ala	Asp	Pro	Leu	Asn	Gln
3800						3805					3810			
Met	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	Gly
3815						3820					3825			
Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	Asp	Ile	Leu
3830						3835					3840			
Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Asn	Asn	Glu	Glu
3845						3850					3855			
Glu	Gly	Ser	Thr	Gly	Asn	Gly	Glu	Glu	Glu	Gly	Gly	Ala	Ser	Ile
3860						3865					3870			
His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala
3875						3880					3885			
Arg	Leu	Ala	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile
3890						3895					3900			

Ser	Ala	Cys	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Lys	Thr	Leu
3905						3910					3915			
Gln	Leu	Gly	Ile	Ala	Val	Leu	Arg	Gly	Gly	Asn	Leu	Glu	Ile	Gln
3920						3925					3930			
Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe
3935						3940					3945			
Phe	Thr	Ser	Val	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp
3950						3955					3960			
Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val
3965						3970					3975			
Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu
3980						3985					3990			
Phe	Thr	Cys	Thr	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly
3995						4000					4005			
His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn
4010						4015					4020			
Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu
4025						4030					4035			
Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser
4040						4045					4050			
Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala
4055						4060					4065			
Ile	Gly	Val	Ala	Ser	Leu	Val	Phe	Asn	Thr	Leu	Ser	Glu	Val	Ile
4070						4075					4080			
Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg
4085						4090					4095			
Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met
4100						4105					4110			
Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys
4115						4120					4125			
Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser
4130						4135					4140			
Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met
4145						4150					4155			
Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu
4160						4165					4170			
Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr	Ser	Ser
4175						4180					4185			
Thr	Ser	Phe	Thr	Glu	Ile	Asp	Pro	Asn	Asn	Asp	Gly	Trp	Val	His
4190						4195					4200			

Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	Ser	Tyr	Thr
4205						4210					4215			
Ala	Glu	Glu	Ile	Glu	Phe	Met	Leu	Gln	Cys	Cys	Glu	Ser	Asn	His
4220						4225					4230			
Asp	Gly	Lys	Ile	Asp	Tyr	Ile	Gly	Phe	Thr	Asp	Gln	Phe	His	Glu
4235						4240					4245			
Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr	Asn
4250						4255					4260			
Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Thr	Arg	Phe	Leu
4265						4270					4275			
Glu	Thr	Ala	Ser	Ser	Val	Leu	Asn	Tyr	Phe	Gln	Pro	Phe	Leu	Gly
4280						4285					4290			
Arg	Ile	Glu	Ile	Leu	Gly	Gly	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr
4295						4300					4305			
Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Leu	Lys	Pro	Gln
4310						4315					4320			
Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr	Glu
4325						4330					4335			
Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys	Glu
4340						4345					4350			
Asp	Ala	Ile	Phe	Glu	Met	Gln	His	Ala	Ser	Gly	Leu	Met	Ala	Val
4355						4360					4365			
Asp	Asp	Gly	Ser	Gly	Ile	Gly	Gly	Gly	Lys	Ser	Arg	Lys	Thr	Ser
4370						4375					4380			
Tyr	Thr	Tyr	Leu	Ala	Asp	Asp	Glu	Glu	Asn	Lys	Thr	Ala	Lys	Asp
4385						4390					4395			
Pro	Ile	Arg	Arg	Gly	Ile	Gln	Ala	Ile	Lys	Tyr	Gly	Phe	His	Leu
4400						4405					4410			
Leu	Phe	Phe	Val	Leu	Ser	Pro	Thr	Asn	Ile	Lys	Asn	Lys	Ile	Asn
4415						4420					4425			
Glu	Ile	Gln	Gln	Met	Ser	Val	Ile	Glu	Leu	Ile	Thr	Ser	Phe	Phe
4430						4435					4440			
Lys	Leu	Trp	Phe	Tyr	Leu	Ile	Phe	Tyr	Thr	Gly	Tyr	Ser	Gly	Val
4445						4450					4455			
Tyr	Val	Leu	Arg	Tyr	Ile	Ser	Arg	Ile	Leu	Met	Gln	Leu	Met	Ser
4460						4465					4470			
Gly	Thr	Gln	Ser	Glu	Glu	Thr	Thr	Val	Glu	Val	Val	Glu	Glu	Lys
4475						4480					4485			
Ser	Gly	Ser	Phe	Arg	Met	Leu	Pro	Ala	Leu	Pro	Ser	Ser	Gly	Ile
4490						4495					4500			

Asp	Glu	Thr	Pro	Ser	Thr	Leu	Thr	Asp	Ser	Asn	Asn	Met	Arg	Lys
4505						4510					4515			
Asn	Ser	Gly	Ser	Leu	Asp	Ser	Lys	His	Leu	Lys	Ser	Thr	Thr	Gly
4520						4525					4530			
Gly	Asp	Asp	Lys	Asp	Glu	Thr	Ser	Ala	Glu	Asn	His	Glu	Lys	Glu
4535						4540					4545			
Asp	Gly	Val	Asp	Gly	Ser	Glu	Leu	Gln	Ala	Ser	Phe	Val	Asp	Leu
4550						4555					4560			
Leu	Val	Gly	Glu	Ser	Ala	Arg	Lys	Asp	Ser	Ile	Ala	Gly	Pro	Glu
4565						4570					4575			
Val	Leu	Ala	Gln	Gln	Gln	Ala	Val	Met	Ala	Ala	Val	Glu	Ala	Glu
4580						4585					4590			
Ile	Lys	Gln	Lys	Asn	Ser	Val	Glu	Asn	Pro	Ser	Ala	Phe	Ser	Thr
4595						4600					4605			
Ile	Asp	Ile	Asn	Ala	Tyr	Thr	His	Arg	Ala	Leu	Ser	Phe	Leu	Ala
4610						4615					4620			
Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe
4625						4630					4635			
Cys	Ile	Asn	Phe	Ile	Leu	Leu	Phe	Tyr	Lys	Val	Thr	Thr	Leu	Ala
4640						4645					4650			
Asp	Asp	Leu	Ser	Asp	Asp	Gly	Asp	Val	Lys	Glu	Phe	Ala	Leu	Gly
4655						4660					4665			
Ser	Ala	Gly	Ile	Ser	Asn	Asp	Asp	Ile	Asp	Asp	Ser	Asn	Ser	Thr
4670						4675					4680			
Glu	Met	Ala	Asp	Asp	Asp	Gly	Ala	Leu	Glu	Leu	Val	His	Val	Asn
4685						4690					4695			
Glu	Asp	Phe	Phe	Tyr	Met	Ala	His	Val	Met	Arg	Leu	Ala	Ala	Leu
4700						4705					4710			
Leu	His	Ser	Leu	Ala	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His
4715						4720					4725			
Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala
4730						4735					4740			
Arg	Arg	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Val	Glu	Gln	Pro	Glu
4745						4750					4755			
Asp	Asp	Asp	Ile	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala
4760						4765					4770			
Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Ala	Lys	Lys	Lys
4775						4780					4785			
Val	Arg	Gln	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser
4790						4795					4800			



Asn	Ser	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Thr	Gln	Glu	Asn
4805						4810					4815			
Glu	Glu	Arg	Thr	Gly	Leu	Ile	Asn	Phe	Val	Ile	Asn	Ile	Asp	Trp
4820						4825					4830			
Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	Asp	Asn	Ala
4835						4840					4845			
Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Thr	Phe	Ser	Ile	Leu	Gly	Asn
4850						4855					4860			
Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val
4865						4870					4875			
Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn
4880						4885					4890			
Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Leu	Leu	Leu	Thr	Ile	Ile	Val
4895						4900					4905			
Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr
4910						4915					4920			
Val	Gln	Glu	Glu	Asp	Asp	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met
4925						4930					4935			
Leu	Thr	Cys	Phe	Val	Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly
4940						4945					4950			
Gly	Gly	Ile	Gly	Asp	Glu	Ile	Gly	Ser	Pro	Asp	Gly	Asp	Asp	Tyr
4955						4960					4965			
Glu	Val	Tyr	Arg	Ile	Met	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val
4970						4975					4980			
Ile	Ile	Ile	Leu	Leu	Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala
4985						4990					4995			
Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	Glu	Asp	Met
5000						5005					5010			
Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Gly	Lys	Asp	Tyr	Phe	Asp
5015						5020					5025			
Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Glu	Glu	His	Asn
5030						5035					5040			
Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro
5045						5050					5055			
Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr
5060						5065					5070			
Gln	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg
5075						5080					5085			
Lys	Gln	Tyr	Glu	Glu	Glu	Leu	Gly	Gly	Gly	Gly	Gly	Val		
5090						5095					5100			

<210> 5  
 <211> 15315  
 <212> DNA  
 <213> *Periplaneta americana*

<220>  
 <221> CDS  
 <222> (1)..(15312)  
 <223>

```

<400> 5
atg gcc gac agc gag gga agt tcg gaa cag gac gat gtg tcg ttt ctc      48
Met Ala Asp Ser Glu Gly Ser Ser Glu Gln Asp Asp Val Ser Phe Leu
1      5      10      15
cgg acc gaa gat atg gtg tgt tta tca tgc act gcg act gga gaa aga      96
Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg
      20      25      30
gtt tgt ctt gca gct gaa gga ttt gga aat cgg cac tgt tac ttg gaa      144
Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Tyr Leu Glu
      35      40      45
aat att gcc gat aaa aat att cca ccc gac ttg tct cag tgt gta ttt      192
Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe
      50      55      60
gtc att gaa caa gca tta tca gtg aga gct tta caa gaa cta gtt aca      240
Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr
      65      70      75      80
gct aca agt tct caa gaa gga aaa ggt gga act gga tct gga cac cga      288
Ala Thr Ser Ser Gln Glu Gly Lys Gly Gly Thr Gly Ser Gly His Arg
      85      90      95
aca ttg ttg tat gga aat gct att tta tta cgt cat caa aat agc gat      336
Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln Asn Ser Asp
      100      105      110
atg tat tta gct tgt tta tca aca agt tcg tca aat gat aaa tta tct      384
Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser
      115      120      125
ttt gac gtt ggt tta caa gag cat tca caa ggt gaa gct tgt tgg tgg      432
Phe Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp
      130      135      140
act gtg cat cca gca tcg aaa caa cga tca gag ggt gaa aaa gtt aga      480
Thr Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg
      145      150      155      160
gtt gga gat gat cta att tta gtg tct gtg gca act gaa cgg tat ttg      528
Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu
      165      170      175
cac acc gcc aaa gaa aat gag tta tct gta gtt aat gca tca ttt cac      576
His Thr Ala Lys Glu Asn Glu Leu Ser Val Val Asn Ala Ser Phe His
      180      185      190
gta act cat tgg tca gta caa cca tat ggt act ggt atc agt aga atg      624
Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met
      195      200      205
aaa tac gtt ggt tat gtt ttt ggt gga gac gta cta aga ttc ttt cat      672
Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His
      210      215      220
ggc ggt gat gag tgc ttg aca ata ccg tcg acg tgg agc aat gta tct      720
Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Ser Asn Val Ser
      225      230      235      240
gga caa aat ata gta att tat gaa ggc gga agc gtt atg agt caa gca      768
Gly Gln Asn Ile Val Ile Tyr Glu Gly Gly Ser Val Met Ser Gln Ala

```

agg tca tta tgg cgt ttg gaa ttg gct aga act aaa tgg gct ggt gga	245	250	255	816
Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly				
ttc att aat tgg tat cat cca atg cga ata aga cat ttg aca acc gga	260	265	270	864
Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Leu Thr Thr Gly				
cgg tat tta ggt gtc aat gaa aac aat gag tta cat tta gtt tgc aga	275	280	285	912
Arg Tyr Leu Gly Val Asn Glu Asn Asn Glu Leu His Leu Val Cys Arg				
gaa gaa gcc acc act gct tca tct aca ttt ttt tta cgt caa gag aaa	290	295	300	960
Glu Glu Ala Thr Thr Ala Ser Ser Thr Phe Phe Leu Arg Gln Glu Lys				
gac gat caa aaa ata att tta gaa gac aaa gat tta gaa gta att gga	305	310	315	1008
Asp Asp Gln Lys Ile Ile Leu Glu Asp Lys Asp Leu Glu Val Ile Gly				
gca cct att att aag tat ggt gac agt acg gta tta gta caa cat tct	325	330	335	1056
Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val Leu Val Gln His Ser				
gat aca ggt tta tgg tta aca tac aag tct tat gaa aca aaa aaa aaa	340	345	350	1104
Asp Thr Gly Leu Trp Leu Thr Tyr Lys Ser Tyr Glu Thr Lys Lys Lys				
ggc gtc ggt aaa gta gaa gaa aaa caa gca gta tta cat gaa gaa ggt	355	360	365	1152
Gly Val Gly Lys Val Glu Glu Lys Gln Ala Val Leu His Glu Glu Gly				
aaa atg gac gat ggg tta gac ttt agt agg agt caa gaa gaa gag tct	370	375	380	1200
Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser				
aga act gct aga gtg ata cgt aaa tgc tcc tca tta ttc aca cag ttt	385	390	395	1248
Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe				
att tcc gga ctg gaa aat tta caa agt aac aga cgt tcg tca tta ttt	405	410	415	1296
Ile Ser Gly Leu Glu Asn Leu Gln Ser Asn Arg Arg Ser Ser Leu Phe				
tgt tca ttc gtt aat cta aat gaa atg gtc atg tgt cta gaa gat tta	420	425	430	1344
Cys Ser Phe Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu				
ata aat tat ttt gct caa cct gaa gaa gat atg gaa cac gaa gaa aaa	435	440	445	1392
Ile Asn Tyr Phe Ala Gln Pro Glu Glu Asp Met Glu His Glu Glu Lys				
caa aat cga ttt aga gca tta aga aat aga caa gat tta ttt caa gaa	450	455	460	1440
Gln Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu				
gaa ggc ata tta aat ctg att cta gaa gct att gat aaa gtt aat att	465	470	475	1488
Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Val Asn Ile				
att acg tca caa gga ttt atg gtc agt tta gct ggt gat gag tct gga	485	490	495	1536
Ile Thr Ser Gln Gly Phe Met Val Ser Leu Ala Gly Asp Glu Ser Gly				
caa agt tgg gat gtg att tct ggt tat tta tac cag ttg cta gct gca	500	505	510	1584
Gln Ser Trp Asp Val Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala Ala				
att ata aag gga aat cat act aat tgt gct caa ttt gct aac act aac	515	520	525	1632
Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Thr Asn				
cga tta aat tgg tta ttt agt cga tta gga tct caa gca tcc agt gag	530	535	540	1680
Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu				
gga act ggt atg tta gat gta ctt cac tgt gtt ctc att gat tct ccg	545	550	555	1728
Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro				

gaa gct tta aat atg atg aaa gat	565	gaa cat ata aaa gta ata ata tct	570	575	1776
Glu Ala Leu Asn Met Met Lys Asp		Glu His Ile Lys Val Ile Ile Ser			
580		585		590	
ctt ttg gaa aaa cat ggt cgt gat		cca aaa gtg tta gac gtt tta tgt			1824
Leu Leu Glu Lys His Gly Arg Asp		Pro Lys Val Leu Asp Val Leu Cys			
595		600		605	
tcc cta tgc gtt ggt aac ggt gtg gcc gta aga agt tca caa aat aat					1872
Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn					
610		615		620	
ata tgt gat ttc tta tta cca gga aaa aat tta ctt ctt cag acc tta					1920
Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu					
625		630		635	640
ctt gtt gat cat gta gcc agt gta cgt ccc aat att ttt gtt ggt cat					1968
Leu Val Asp His Val Ala Ser Val Arg Pro Asn Ile Phe Val Gly His					
645		650		655	
gtt agt gga tct gcc gtt tat cga aaa tgg tat tat gaa gta gca ata					2016
Val Ser Gly Ser Ala Val Tyr Arg Lys Trp Tyr Tyr Glu Val Ala Ile					
660		665		670	
gat cat gta gaa caa act aca cat tta aat cca cac att cga att gga					2064
Asp His Val Glu Gln Thr Thr His Leu Asn Pro His Ile Arg Ile Gly					
675		680		685	
tgg gca aat act gca ggt tat gtt ccg tat cct ggt ggc gga gaa aaa					2112
Trp Ala Asn Thr Ala Gly Tyr Val Pro Tyr Pro Gly Gly Gly Glu Lys					
690		695		700	
tgg ggt gga aat ggc gtt ggg gat gat tta tat tct ttc gga ttt gat					2160
Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp					
705		710		715	720
ggg tca tat tta tgg aca gga gga cgt aaa tca gaa gtg atg cct ggt					2208
Gly Ser Tyr Leu Trp Thr Gly Gly Arg Lys Ser Glu Val Met Pro Gly					
725		730		735	
tca gaa att tct aac att aaa aaa ggt gat gta atc ggt tgt gca tta					2256
Ser Glu Ile Ser Asn Ile Lys Lys Gly Asp Val Ile Gly Cys Ala Leu					
740		745		750	
gat tta act att cca att ata act ttt aca ttg aac ggt caa ttg gtc					2304
Asp Leu Thr Ile Pro Ile Ile Thr Phe Thr Leu Asn Gly Gln Leu Val					
755		760		765	
caa gga gcc ttc aga gac ttc aat tta gat ggg atg ttt ttc cca gta					2352
Gln Gly Ala Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val					
770		775		780	
att agt tgt tca tca aaa gtc ggc tgt cgt ttt tta ttg ggc gga gat					2400
Ile Ser Cys Ser Ser Lys Val Gly Cys Arg Phe Leu Leu Gly Gly Asp					
785		790		795	800
cat ggt cga ttg aag ttt act cct cca gac gaa ttt tct cct cta ttt					2448
His Gly Arg Leu Lys Phe Thr Pro Pro Asp Glu Phe Ser Pro Leu Phe					
805		810		815	
gaa agt tta tta cct caa caa att ttg aca atc gat ccg tgc ttc tat					2496
Glu Ser Leu Leu Pro Gln Gln Ile Leu Thr Ile Asp Pro Cys Phe Tyr					
820		825		830	
ttt gga aat ctt agt aaa tgc gta ctc acg gga ccg tgg tat gtt gaa					2544
Phe Gly Asn Leu Ser Lys Cys Val Leu Thr Gly Pro Trp Tyr Val Glu					
835		840		845	
gat gat aca gca ttt gtt cca aat cca gtt gat aca tca atg gtc act					2592
Asp Asp Thr Ala Phe Val Pro Asn Pro Val Asp Thr Ser Met Val Thr					
850		855		860	
tta cct agt tac ata gaa aat att aaa gat aaa tta gca gag aat att					2640
Leu Pro Ser Tyr Ile Glu Asn Ile Lys Asp Lys Leu Ala Glu Asn Ile					
865		870		875	880
cat gaa atg tgg gca atg aat aaa att gaa gct ggt tgg caa tat ggt					2688
His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Gln Tyr Gly					

															885																890																895																															
gat	aaa	aga	aat	gat	act	agg	aaa	tat	cat	cca	tgt	tta	ata	cag	ttt																2736																																															
Asp	Lys	Arg	Asn	Asp	Thr	Arg	Lys	Tyr	His	Pro	Cys	Leu	Ile	Gln	Phe																																																															
															900																905																910																															
gac	aag	ttg	cct	cca	gcc	gag	aag	cgt	tat	gat	tct	caa	tta	gct	gtg																2784																																															
Asp	Lys	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ser	Gln	Leu	Ala	Val																																																															
															915																920																925																															
caa	acg	ctt	aaa	acg	gtt	att	gcg	ttg	gga	tat	cac	ata	tcc	atc	gat																2832																																															
Gln	Thr	Leu	Lys	Thr	Val	Ile	Ala	Leu	Gly	Tyr	His	Ile	Ser	Ile	Asp																																																															
															930																935																940																															
aat	cca	ccg	tcc	cgc	att	aaa	acg	gta	cgg	ttg	ccc	aac	gaa	cca	ttt																2880																																															
Asn	Pro	Pro	Ser	Arg	Ile	Lys	Thr	Val	Arg	Leu	Pro	Asn	Glu	Pro	Phe																																																															
															945																950																955																960															
atg	caa	tcc	aat	ggc	tac	aaa	cca	gca	cca	cta	gat	tta	tct	gca	ata																2928																																															
Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala	Ile																																																															
															965																970																975																															
aat	ttg	tca	ggg	aaa	atg	gaa	gaa	tta	att	gac	cag	tta	gct	gag	aat																2976																																															
Asn	Leu	Ser	Gly	Lys	Met	Glu	Glu	Leu	Ile	Asp	Gln	Leu	Ala	Glu	Asn																																																															
															980																985																990																															
aca	cat	aat	tta	tgg	gca	aaa	gaa	aga	ata	caa	caa	gga	tgg	acg	tat																3024																																															
Thr	His	Asn	Leu	Trp	Ala	Lys	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	Tyr																																																															
															995																1000																1005																															
ggt	tta	aat	gaa	gaa	tta	caa	atg	tta	cgc	agt	cct	cat	tta	gta																3069																																																
Gly	Leu	Asn	Glu	Glu	Leu	Gln	Met	Leu	Arg	Ser	Pro	His	Leu	Val																																																																
															1010																1015																1020																															
ccg	tac	agc	aaa	gta	gat	gac	gct	att	aaa	aaa	gct	aat	aga	gat																3114																																																
Pro	Tyr	Ser	Lys	Val	Asp	Asp	Ala	Ile	Lys	Lys	Ala	Asn	Arg	Asp																																																																
															1025																1030																1035																															
aca	gca	agt	gaa	aca	gtc	cgc	act	tta	tta	gta	tat	ggt	tac	aac																3159																																																
Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr	Asn																																																																
															1040																1045																1050																															
tta	gac	cca	ccg	act	gga	gaa	aca	aac	gaa	gcg	aca	ctc	cta	aca																3204																																																
Leu	Asp	Pro	Pro	Thr	Gly	Glu	Thr	Asn	Glu	Ala	Thr	Leu	Leu	Thr																																																																
															1055																1060																1065																															
gac	gaa	aac	act	aat	aga	tac	ttg	acg	ttc	aga	aca	tat	cgt	gct																3249																																																
Asp	Glu	Asn	Thr	Asn	Arg	Tyr	Leu	Thr	Phe	Arg	Thr	Tyr	Arg	Ala																																																																
															1070																1075																1080																															
gaa	aaa	aca	tat	gct	gtt	gca	agt	gga	aaa	tgg	tat	ttc	gag	ttt																3294																																																
Glu	Lys	Thr	Tyr	Ala	Val	Ala	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe																																																																
															1085																1090																1095																															
gag	ata	ttg	aca	aac	ggg	ccc	atg	cga	gtt	gga	tgg	gcc	agg	ttt																3339																																																
Glu	Ile	Leu	Thr	Asn	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Phe																																																																
															1100																1105																1110																															
aca	tgt	tct	ccg	ggc	tat	caa	atc	ggc	agt	gac	gaa	aat	tct	tgg																3384																																																
Thr	Cys	Ser	Pro	Gly	Tyr	Gln	Ile	Gly	Ser	Asp	Glu	Asn	Ser	Trp																																																																
															1115																1120																1125																															
gca	ttt	gat	ggc	tat	aac	gaa	gaa	aaa	att	tat	atg	ggc	aca	gcc																3429																																																
Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Ile	Tyr	Met	Gly	Thr	Ala																																																																
															1130																1135																1140																															
gaa	tca	ttt	ggg	agg	cag	tgg	caa	gtt	gga	gat	gtc	gtg	gga	gtg																3474																																																
Glu	Ser	Phe	Gly	Arg	Gln	Trp	Gln	Val	Gly	Asp	Val	Val	Gly	Val																																																																
															1145																1150																1155																															
ttt	tta	gac	cta	atg	gat	cat	aca	ata	agt	ttt	tcg	ttg	aat	gga																3519																																																
Phe	Leu	Asp	Leu	Met	Asp	His	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly																																																																
															1160																1165																1170																															
gaa	tta	cta	atg	gat	aca	ttg	gga	gga	gaa	act	acg	ttt	tct	gaa																3564																																																
Glu	Leu	Leu	Met	Asp	Thr	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ser	Glu																																																																
															1175																1180																1185																															
gtt	caa	gga	gaa	gga	ttt	gta	cct	gca	ttt	act	ctg	gga	cta	gga																3609																																																
Val	Gln	Gly	Glu	Gly	Phe	Val	Pro	Ala	Phe	Thr	Leu	Gly	Leu	Gly																																																																

1190	caa aaa gca aaa tta act ttt	1195	ggg caa gac gta aac tca ttg aaa	1200	3654
Gln Lys Ala Lys Leu Thr Phe	Gly Gln Asp Val Asn Ser Leu Lys				
1205	tac ttc acg act tgt ggt ctt	1210	caa gaa gga tat gaa cca ttt tgc	1215	3699
Tyr Phe Thr Thr Cys Gly Leu	Gln Glu Gly Tyr Glu Pro Phe Cys				
1220	gta aac atg aag aga cca gta	1225	aca tat tgg tat act aag gat caa	1230	3744
Val Asn Met Lys Arg Pro Val	Thr Tyr Trp Tyr Thr Lys Asp Gln				
1235	cca ata ttt gaa aat act gat	1240	gac ttt tcg tct gta att gat gtt	1245	3789
Pro Ile Phe Glu Asn Thr Asp	Asp Phe Ser Ser Val Ile Asp Val				
1250	aca aga att cca gct ggt tca	1255	gat aca cca ccg tgt cta aaa ata	1260	3834
Thr Arg Ile Pro Ala Gly Ser	Asp Thr Pro Pro Cys Leu Lys Ile				
1265	agt cat aat aca ttt gaa acc	1270	atg gaa aga gct aat tgg gaa ttt	1275	3879
Ser His Asn Thr Phe Glu Thr	Met Glu Arg Ala Asn Trp Glu Phe				
1280	tta cgg cta tct ttg cct gtc	1285	ata tgt cta cca aat ttt att gat	1290	3924
Leu Arg Leu Ser Leu Pro Val	Ile Cys Leu Pro Asn Phe Ile Asp				
1295	gaa caa gaa aaa caa agg aga	1300	tgg caa gaa atc aga att agg cag	1305	3969
Glu Gln Glu Lys Gln Arg Arg	Trp Gln Glu Ile Arg Ile Arg Gln				
1310	cac agg tta ttg tca caa tct	1315	gag cat gct act cct gct cat att	1320	4014
His Arg Leu Leu Ser Gln Ser	Glu His Ala Thr Pro Ala His Ile				
1325	gaa caa ata atg aaa tca gga	1330	ttt tca atg agt gat ata aaa ggt	1335	4059
Glu Gln Ile Met Lys Ser Gly	Phe Ser Met Ser Asp Ile Lys Gly				
1340	ctt cat cga ggt tat tcg gat	1345	gat cct gta gaa aac gat gaa atg	1350	4104
Leu His Arg Gly Tyr Ser Asp	Asp Pro Val Glu Asn Asp Glu Met				
1355	atg cca aac act gca cct tta	1360	cca cca aga gga aaa aat caa cca	1365	4149
Met Pro Asn Thr Ala Pro Leu	Pro Pro Arg Gly Lys Asn Gln Pro				
1370	cca cca ccc aga cca cca cga	1375	aaa ggg tct tta tct aga cac gat	1380	4194
Pro Pro Pro Arg Pro Pro Arg	Lys Gly Ser Leu Ser Arg His Asp				
1385	gac tta acg atc gaa aat gac	1390	gga aag ttg aat cgt tca tct agt	1395	4239
Asp Leu Thr Ile Glu Asn Asp	Gly Lys Leu Asn Arg Ser Ser Ser				
1400	gaa ttg aat ttt aac ata tat	1405	aat cag caa aac ggt aat ggc cag	1410	4284
Glu Leu Asn Phe Asn Ile Tyr	Asn Gln Gln Asn Gly Asn Gly Gln				
1415	gac ata aac aaa gat gac aag	1420	aaa aaa aga gga cgt tct cca ttt	1425	4329
Asp Ile Asn Lys Asp Asp Lys	Lys Lys Arg Gly Arg Ser Pro Phe				
1430	cga ttt ttc tcg aga aaa aaa	1435	gaa ggg cct tcg gat aat cct aaa	1440	4374
Arg Phe Phe Ser Arg Lys Lys	Glu Gly Pro Ser Asp Asn Pro Lys				
1445	aga gca aaa act ccg gat cca	1450	gct aga aat gtg gtt aga tca cgt	1455	4419
Arg Ala Lys Thr Pro Asp Pro	Ala Arg Asn Val Val Arg Ser Arg				
1460	aat gct gct cac aga cct aat	1465	aca tta aat gaa aga ata act ccc	1470	4464
Asn Ala Ala His Arg Pro Asn	Thr Leu Asn Glu Arg Ile Thr Pro				
1475	caa ata aga gtt tca caa atg	1480	gac tta aaa ttg gtt cca cca gct	1485	4509
Gln Ile Arg Val Ser Gln Met	Asp Leu Lys Leu Val Pro Pro Ala				

1490	att cct gat aga cca gga ggt	1495	cca aaa gca atg tca	1500	ttt aca cct	4554
Ile Pro Asp Arg Pro Gly	Gly Pro Lys Ala Met Ser	Phe Thr Pro				
1505	tca tca gca ggg att gaa ttc	1510	gtg gga aat gaa ata	1515	ttt gat tta	4599
Ser Ser Ala Gly Ile Glu	Phe Val Gly Asn Glu Ile	Phe Asp Leu				
1520	gaa tgt tta aaa tta ata aac	1525	gag tat tac tat ggt	1530	gta aga ata	4644
Glu Cys Leu Lys Leu Ile Asn	Glu Tyr Tyr Tyr Gly	Val Arg Ile				
1535	ttt ccc ggc caa gac cct aca	1540	cac gtt tac gtg gga	1545	tgg gtt act	4689
Phe Pro Gly Gln Asp Pro Thr	His Val Tyr Val Gly	Trp Val Thr				
1550	act caa ttt cat ctc cat agt	1555	aaa gat ttc agt caa	1560	aat cat gtt	4734
Thr Gln Phe His Leu His Ser	Lys Asp Phe Ser Gln	Asn His Val				
1565	cga aaa agt act gtt aca att	1570	gtc gat gaa cat aat	1575	aga att tta	4779
Arg Lys Ser Thr Val Thr Ile	Val Asp Glu His Asn	Arg Ile Leu				
1580	gaa agt att gat cga caa agc	1585	tgt tac atg gtt cga	1590	tcc gat gag	4824
Glu Ser Ile Asp Arg Gln Ser	Cys Tyr Met Val Arg	Ser Asp Glu				
1595	tta tac aac gaa gta aca aat	1600	gat tcg tcg ggg aag	1605	gga gca tct	4869
Leu Tyr Asn Glu Val Thr Asn	Asp Ser Ser Gly Lys	Gly Ala Ser				
1610	caa gga atg gct ata ggt tgt	1615	ttt att gat ata gct	1620	act gga gtg	4914
Gln Gly Met Ala Ile Gly Cys	Phe Ile Asp Ile Ala	Thr Gly Val				
1625	atg tca ttt aca tgt gaa gga	1630	aaa gaa act agt ttt	1635	aaa ttt aaa	4959
Met Ser Phe Thr Cys Glu Gly	Lys Glu Thr Ser Phe	Lys Phe Lys				
1640	atg gaa cca gat att aaa tta	1645	ttc cct gca ata ttt	1650	gtg gaa gct	5004
Met Glu Pro Asp Ile Lys Leu	Phe Pro Ala Ile Phe	Val Glu Ala				
1655	agt agc aaa gag ata tta caa	1660	att gaa ttg ggt aga	1665	act tct act	5049
Ser Ser Lys Glu Ile Leu Gln	Ile Glu Leu Gly Arg	Thr Ser Thr				
1670	aca ctt cca tta tct gca gct	1675	gtt tta caa aat tca	1680	gaa cgc cat	5094
Thr Leu Pro Leu Ser Ala Ala	Val Leu Gln Asn Ser	Glu Arg His				
1685	gtt ctt cct cag ttt cca ccg	1690	aga tta aaa gtt caa	1695	tgt tta aga	5139
Val Leu Pro Gln Phe Pro Pro	Arg Leu Lys Val Gln	Cys Leu Arg				
1700	cca cat caa tgg gct aga gtt	1705	cca aat gat tct tta	1710	cac att cat	5184
Pro His Gln Trp Ala Arg Val	Pro Asn Asp Ser Leu	His Ile His				
1715	act ctg aaa tta tct gac att	1720	aga ggg tgg agt ata	1725	ctt tgt gaa	5229
Thr Leu Lys Leu Ser Asp Ile	Arg Gly Trp Ser Ile	Leu Cys Glu				
1730	gac cct gtg tcg atg att gca	1735	tta cac att ccc gaa	1740	gaa gat cga	5274
Asp Pro Val Ser Met Ile Ala	Leu His Ile Pro Glu	Glu Asp Arg				
1745	tgt ata gat att tta gag ttg	1750	att gaa atg gag aaa	1755	tta cta tct	5319
Cys Ile Asp Ile Leu Glu Leu	Ile Glu Met Glu Lys	Leu Leu Ser				
1760	ttc cat gct cac acg ttg act	1765	tta tat gca gct gtg	1770	tgc tat caa	5364
Phe His Ala His Thr Leu Thr	Leu Tyr Ala Ala Val	Cys Tyr Gln				
1775	gct aac tac cga gct gct cac	1780	ata tta tgc act cat	1785	gta aat caa	5409
Ala Asn Tyr Arg Ala Ala His	Ile Leu Cys Thr His	Val Asn Gln				

1790	aaa	caa	ttg	tta	tat	gct	ata	tgt	tca	gaa	tat	atg	tct	ggg	cca	5454
	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Cys	Ser	Glu	Tyr	Met	Ser	Gly	Pro	
1805	ttg	cgt	caa	gga	ttt	tat	gat	ctc	tta	ata	gct	tta	cat	tta	gag	5499
	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu	
1820	tcc	cat	gca	aca	aca	atg	gag	ggt	tgt	aaa	aat	gaa	tac	att	ata	5544
	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn	Glu	Tyr	Ile	Ile	
1835	cca	ttg	ggg	cat	gaa	cta	act	gct	tta	tac	gat	gat	cca	caa	atg	5589
	Pro	Leu	Gly	His	Glu	Leu	Thr	Ala	Leu	Tyr	Asp	Asp	Pro	Gln	Met	
1850	ggg	cat	agc	tta	cgg	tcg	tta	caa	act	gaa	tct	ggt	cga	cct	caa	5634
	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro	Gln	
1865	atg	aaa	atg	act	gaa	att	tca	gac	ggt	att	gac	aat	ggt	cga	aac	5679
	Met	Lys	Met	Thr	Glu	Ile	Ser	Asp	Val	Ile	Asp	Asn	Val	Arg	Asn	
1880	tta	tac	agt	cct	tat	ttc	cca	ttg	caa	gta	ggt	aga	gaa	tat	gta	5724
	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Gln	Val	Val	Arg	Glu	Tyr	Val	
1895	atg	gca	gcc	cta	gaa	gaa	gca	gtg	tta	ggt	aat	cag	ggt	cat	aat	5769
	Met	Ala	Ala	Leu	Glu	Glu	Ala	Val	Leu	Val	Asn	Gln	Val	His	Asn	
1910	aga	gat	cct	att	ggg	gga	tct	aat	gaa	aac	ttg	ttt	tta	cca	tta	5814
	Arg	Asp	Pro	Ile	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro	Leu	
1925	tta	aaa	tta	gtg	gat	cgt	ctt	tta	ctt	gtc	ggg	atg	tta	cgt	gat	5859
	Leu	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	Met	Leu	Arg	Asp	
1940	gaa	gat	gta	gaa	aaa	tta	ttg	ata	atg	att	aat	cca	gaa	act	tgg	5904
	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Ile	Asn	Pro	Glu	Thr	Trp	
1955	gat	cct	gaa	ttt	caa	aaa	gat	ggg	ccc	gat	gaa	cat	aga	aaa	ggg	5949
	Asp	Pro	Glu	Phe	Gln	Lys	Asp	Gly	Pro	Asp	Glu	His	Arg	Lys	Gly	
1970	tta	tta	cac	atg	aaa	atg	gct	gag	ggg	gca	aaa	ctt	caa	atg	tgt	5994
	Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys	
1985	tat	tta	tta	cat	cat	tta	tgt	gat	att	caa	ctg	agg	cat	agg	ggt	6039
	Tyr	Leu	Leu	His	His	Leu	Cys	Asp	Ile	Gln	Leu	Arg	His	Arg	Val	
2000	gaa	tcg	ata	atc	tct	ttt	agt	tat	caa	ttt	gtc	aat	gat	ata	caa	6084
	Glu	Ser	Ile	Ile	Ser	Phe	Ser	Tyr	Gln	Phe	Val	Asn	Asp	Ile	Gln	
2015	ata	gat	caa	tta	aga	aga	tat	aat	gaa	ata	aaa	caa	tca	gat	tta	6129
	Ile	Asp	Gln	Leu	Arg	Arg	Tyr	Asn	Glu	Ile	Lys	Gln	Ser	Asp	Leu	
2030	cca	tct	gct	ggt	gct	gca	aaa	aag	acg	aga	gag	ttc	cga	tgt	ccg	6174
	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro	
2045	cct	cgt	gaa	caa	atg	aat	gca	ata	cta	ggc	ttt	aaa	aat	ttg	gat	6219
	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	Leu	Gly	Phe	Lys	Asn	Leu	Asp	
2060	agt	gat	gat	aaa	gaa	aat	tgt	ttg	ata	ggg	gat	gaa	ctt	cgt	gaa	6264
	Ser	Asp	Asp	Lys	Glu	Asn	Cys	Leu	Ile	Gly	Asp	Glu	Leu	Arg	Glu	
2075	aga	atg	aac	gaa	ttt	aat	gag	aaa	ctc	atg	aaa	caa	ata	tta	tta	6309
	Arg	Met	Asn	Glu	Phe	Asn	Glu	Lys	Leu	Met	Lys	Gln	Ile	Leu	Leu	



2090	2095	2100	
gta gct ctt caa gaa tca gaa gat gac aaa tta gat ttg aat aac			6354
Val Ala Leu Gln Glu Ser Glu Asp Asp Lys Leu Asp Leu Asn Asn			
2105	2110	2115	
ata aac aga gaa ggt aaa ata aaa caa ttt tat aac ttt ata aat			6399
Ile Asn Arg Glu Gly Lys Ile Lys Gln Phe Tyr Asn Phe Ile Asn			
2120	2125	2130	
gca gtg aaa gat gaa gca aat gaa aat ggt ctg aac gaa cat gaa			6444
Ala Val Lys Asp Glu Ala Asn Glu Asn Gly Leu Asn Glu His Glu			
2135	2140	2145	
aaa aaa ata cca gaa gaa ata ttt aga aaa gtt tta ata acc act			6489
Lys Lys Ile Pro Glu Glu Ile Phe Arg Lys Val Leu Ile Thr Thr			
2150	2155	2160	
att gta tca tgg gct gaa gaa act caa att gaa aca cca aaa tta			6534
Ile Val Ser Trp Ala Glu Glu Thr Gln Ile Glu Thr Pro Lys Leu			
2165	2170	2175	
gtt aga gaa atg ttc agt tta ttg gtt agg cag tat gat agt gta			6579
Val Arg Glu Met Phe Ser Leu Leu Val Arg Gln Tyr Asp Ser Val			
2180	2185	2190	
gga gaa ttg att cgt gca tta gag aaa aca tat gta att aat ttt			6624
Gly Glu Leu Ile Arg Ala Leu Glu Lys Thr Tyr Val Ile Asn Phe			
2195	2200	2205	
aaa aca aaa gaa gat gtt gct caa atg tgg gtt gga ctt agt caa			6669
Lys Thr Lys Glu Asp Val Ala Gln Met Trp Val Gly Leu Ser Gln			
2210	2215	2220	
atc cgt tct ttg ttg cca gtg caa atg tca caa gaa gaa gaa gaa			6714
Ile Arg Ser Leu Leu Pro Val Gln Met Ser Gln Glu Glu Glu			
2225	2230	2235	
ttg atg aga gaa cga tta tgg aaa ctg gta aat aac cac aca ttt			6759
Leu Met Arg Glu Arg Leu Trp Lys Leu Val Asn Asn His Thr Phe			
2240	2245	2250	
ttc caa cat cct gat tta ata aga gtt ctt cgg atg cac gaa aat			6804
Phe Gln His Pro Asp Leu Ile Arg Val Leu Arg Met His Glu Asn			
2255	2260	2265	
gtt atg gct gtc atg atg aat aca ctg gga aga aga gct caa gcc			6849
Val Met Ala Val Met Met Asn Thr Leu Gly Arg Arg Ala Gln Ala			
2270	2275	2280	
caa tcg caa cca ggt gga act act gta acg gga caa gat gga gaa			6894
Gln Ser Gln Pro Gly Gly Thr Thr Val Thr Gly Gln Asp Gly Glu			
2285	2290	2295	
atc gtt ccg aaa gaa aag gat aca tca cat gaa atg gtc gta gct			6939
Ile Val Pro Lys Glu Lys Asp Thr Ser His Glu Met Val Val Ala			
2300	2305	2310	
tgt tgt cgg ttc tta tgt tat ttt tgc cgt aca tcc agg caa aac			6984
Cys Cys Arg Phe Leu Cys Tyr Phe Cys Arg Thr Ser Arg Gln Asn			
2315	2320	2325	
caa aaa gcc atg ttt gac cat ttt tca ttt tta tta gaa aat agt			7029
Gln Lys Ala Met Phe Asp His Phe Ser Phe Leu Leu Glu Asn Ser			
2330	2335	2340	
aac ata ttg ctc tct aga ccg tca cta aga gga agt aca cca ctc			7074
Asn Ile Leu Leu Ser Arg Pro Ser Leu Arg Gly Ser Thr Pro Leu			
2345	2350	2355	
gat gtt gct tat tcg tca ctc atg gaa aat act gaa ctt gca tta			7119
Asp Val Ala Tyr Ser Ser Leu Met Glu Asn Thr Glu Leu Ala Leu			
2360	2365	2370	
gcg ttg aga gaa cat tat ttg gaa aag atc gcg ata tat ttg tct			7164
Ala Leu Arg Glu His Tyr Leu Glu Lys Ile Ala Ile Tyr Leu Ser			
2375	2380	2385	
cga tgt ggt ttg caa tct aat tct gaa ttg att gag aaa gga tat			7209
Arg Cys Gly Leu Gln Ser Asn Ser Glu Leu Ile Glu Lys Gly Tyr			

2390	cct gat tta gga tgg gac	2395	cca gtg gaa gga gaa aga	2400	tat tta gac	7254
Pro Asp	Leu Gly Trp Asp	Pro	Val Glu Gly Glu Arg	Tyr	Leu Asp	
2405	ttt cta cga ttt tgt gtt	2410	gtg gtc aac ggt gaa agt	2415	gta gag gaa	7299
Phe Leu	Arg Phe Cys Val	Trp	Val Asn Gly Glu Ser	Val	Glu Glu	
2420	aat gca aat tta gtt att	2425	ttg ctt att cgc agg	2430	cct gag tgt	7344
Asn Ala	Asn Leu Val Ile	Arg	Leu Leu Ile Arg	Arg	Pro Glu Cys	
2435	ttg ggt cct gca tta aga	2440	gaa gga gaa gga ctt	2445	tta cgt gcc	7389
Leu Gly	Pro Ala Leu Arg	Gly	Glu Gly Glu Gly Leu	Leu	Leu Arg Ala	
2450	ata att gat gca aat aaa	2455	tct gaa aga ata gca	2460	gaa cga aga	7434
Ile Ile	Asp Ala Asn Lys	Met	Ser Glu Arg Ile Ala	Ala	Glu Arg Arg	
2465	aag ttc tta gaa gaa tcg	2470	aac caa gaa aat att	2475	caa tta gat	7479
Lys Phe	Leu Glu Glu Ser	Gly	Asn Gln Glu Asn Ile	Gln	Leu Asp	
2480	cat ccg ctt ccg gaa tcc	2485	gac gat gaa gat tat	2490	att gat acg	7524
His Pro	Leu Pro Glu Ser	Glu	Asp Asp Glu Asp Tyr	Ile	Asp Thr	
2495	gga gct gcc att tta aat	2500	tac tgt act ctt gtt	2505	gac tta cta	7569
Gly Ala	Ala Ile Leu Asn	Phe	Tyr Cys Thr Leu Val	Asp	Leu Leu	
2510	gga cga tgt gca ccg gac	2515	tca gta att gca ctg	2520	ggg aag aat	7614
Gly Arg	Cys Ala Pro Asp	Ser	Ser Val Ile Ala Leu	Gly	Lys Asn	
2525	gaa tct tta cgt gca aga	2530	gcc att ctg aga tca	2535	gta cca ctt	7659
Glu Ser	Leu Arg Ala Arg	Ala	Ile Leu Arg Ser Leu	Val	Pro Leu	
2540	gaa gat tta cac ggt gtt	2545	agt ctt aga ttt aca	2550	tta cag aat	7704
Glu Asp	Leu His Gly Val	Leu	Ser Leu Arg Phe Thr	Leu	Gln Asn	
2555	cca gct gct ggt caa gat	2560	cca aag agt gat atg	2565	ccc tca ggg	7749
Pro Ala	Ala Gly Gln Asp	Arg	Pro Lys Ser Asp Met	Pro	Ser Gly	
2570	tta ata cca gga cac aaa	2575	agt gtt gtt ctc ttt	2580	tta gaa cga	7794
Leu Ile	Pro Gly His Lys	Gln	Ser Val Val Leu Phe	Leu	Glu Arg	
2585	gtg tat ggt atc gaa atg	2590	gag tta ttt ttc aca	2595	tta cta gag	7839
Val Tyr	Gly Ile Glu Met	Gln	Glu Leu Phe Phe Thr	Leu	Leu Glu	
2600	gaa gca ttt tta cca gat	2605	ctg aca gca aca atg	2610	ctt gat aga	7884
Glu Ala	Phe Leu Pro Asp	Leu	Arg Thr Ala Thr Met	Leu	Asp Arg	
2615	aat gat gga ctt gaa tca	2620	atg gca ttg gca atg	2625	aat aga tat	7929
Asn Asp	Gly Leu Glu Ser	Asp	Met Ala Leu Ala Met	Asn	Arg Tyr	
2630	att gga aat tca gta tta	2635	tta ctc att ggt cat	2640	tca aaa ttc	7974
Ile Gly	Asn Ser Val Leu	Pro	Leu Leu Ile Gly His	Ser	Lys Phe	
2645	tat agc gag tcc gat aac	2650	gct aat ttg tta gat	2655	gca acg tta	8019
Tyr Ser	Glu Ser Asp Asn	Tyr	Ala Asn Leu Leu Asp	Ala	Thr Leu	
2660	cac act gtg tat aga tta	2665	aaa aat aga atg tta	2670	aca aaa ggg	8064
His Thr	Val Tyr Arg Leu	Ser	Lys Asn Arg Met Leu	Thr	Lys Gly	
2675	cag cga gaa gct gtt tca	2680	ttt tta gta gca tta	2685	act agt caa	8109
Gln Arg	Glu Ala Val Ser	Asp	Phe Leu Val Ala Leu	Thr	Ser Gln	

2690	atg caa cca agt atg tta tta	2695	aaa cta ctg aga aaa	2700	ctt acg gtt	8154
Met Gln Pro Ser Met Leu Leu	Lys Leu Leu Arg Lys	Leu Thr Val				
2705	gat gtt tca aat tta tca	2710	tat act act gta gcg	2715	ctt aga ttg	8199
Asp Val Ser Asn Leu Ser	Glu Tyr Thr Thr Val Ala	Leu Arg Leu				
2720	tta act ttg cat tac gat	2725	tgt gca aaa tac tat	2730	gga tca aca	8244
Leu Thr Leu His Tyr Asp	Arg Cys Ala Lys Tyr	Gly Ser Thr				
2735	ggg ggt caa gga att tac	2740	ggt tct agc gac gaa	2745	gaa aaa aga	8289
Gly Gly Gln Gly Ile Tyr	Gly Ala Ser Ser Asp	Glu Glu Lys Arg				
2750	tta acc atg atg tta ttc	2755	aac ata ttt gat tcc	2760	ttg tca aaa	8334
Leu Thr Met Met Leu Phe	Ser Asn Ile Phe Asp	Ser Leu Ser Lys				
2765	atg gac tac gat cca gaa	2770	ttc gga aaa gca tta	2775	cct tgc cta	8379
Met Asp Tyr Asp Pro Glu	Leu Phe Gly Lys Ala	Leu Pro Cys Leu				
2780	tca gca att gga tgt gct	2785	cct cca gat tat tca	2790	ctg tca aaa	8424
Ser Ala Ile Gly Cys Ala	Leu Pro Pro Asp Tyr	Ser Leu Ser Lys				
2795	aat tat gat gac gag tgg	2800	ggg tct aaa cag aat	2805	att caa ggc	8469
Asn Tyr Asp Asp Glu Trp	Tyr Gly Ser Lys Gln	Asn Ile Gln Gly				
2810	cct tct gat gga cct tac	2815	cca caa cca ata aac	2820	acg aat agc	8514
Pro Ser Asp Gly Pro Tyr	Asn Pro Gln Pro Ile	Asn Thr Asn Ser				
2825	att gtt ctt gat aat gac	2830	aac tct att gta cat	2835	aag ttc tca	8559
Ile Val Leu Asp Asn Asp	Leu Asn Ser Ile Val	His Lys Phe Ser				
2840	gaa cat tat cat gat gca	2845	gca aat cgt aaa ttg	2850	gaa aat ggg	8604
Glu His Tyr His Asp Ala	Trp Ala Asn Arg Lys	Leu Glu Asn Gly				
2855	tgg gtt tat gga gaa caa	2860	aat gat gtt aat aaa	2865	agt cat cct	8649
Trp Val Tyr Gly Glu Gln	Phe Asn Asp Val Asn	Lys Ser His Pro				
2870	cgt cta aaa cca tac atg	2875	ttg agt gaa tac gaa	2880	aaa gaa cta	8694
Arg Leu Lys Pro Tyr Met	Met Leu Ser Glu Tyr	Glu Lys Glu Leu				
2885	tac aaa gaa cct gtg aga	2890	tcc ctt aaa gca tta	2895	ctt gca ata	8739
Tyr Lys Glu Pro Val Arg	Glu Ser Leu Lys Ala	Leu Leu Ala Ile				
2900	gga tgg agt att gaa cat	2905	gag aac gat gca cca	2910	ttg aat aat	8784
Gly Trp Ser Ile Glu His	Ser Glu Asn Asp Ala	Pro Leu Asn Asn				
2915	aga gga tct gtt cga cgt	2920	tca aag tct aat gag	2925	aat gta acg	8829
Arg Gly Ser Val Arg Arg	Gln Ser Lys Ser Asn	Glu Asn Val Thr				
2930	ccg ttt gac tac cat ccg	2935	ccc ata gat atg act	2940	aac ctt aca	8874
Pro Phe Asp Tyr His Pro	Asn Pro Ile Asp Met	Thr Asn Leu Thr				
2945	ctc act aga gaa atg caa	2950	atg gcg gaa aga tta	2955	gca gaa aac	8919
Leu Thr Arg Glu Met Gln	Asn Met Ala Glu Arg	Leu Ala Glu Asn				
2960	tcc cat gac att tgg gct	2965	aag aaa aaa gaa gaa	2970	gtt atg ttg	8964
Ser His Asp Ile Trp Ala	Lys Lys Lys Lys Glu	Glu Val Met Leu				
2975	tgt gga gga ggt att cat	2980	caa ttg gtt ccg tat	2985	gat ttg ctg	9009
Cys Gly Gly Gly Ile His	Asn Gln Leu Val Pro	Tyr Asp Leu Leu				

2990	2995	3000	
acc gat aaa gaa aag aaa aaa gat cga gaa cgc tca caa gag ttc			9054
Thr Asp Lys Glu Lys Lys Lys Asp Arg Glu Arg Ser Gln Glu Phe			
3005	3010	3015	
ctt aaa tat ttg cag tat caa ggt tat aaa tta cac aga ccg aat			9099
Leu Lys Tyr Leu Gln Tyr Gln Gly Tyr Lys Leu His Arg Pro Asn			
3020	3025	3030	
cgt aat gga gga cct tca gat gct gaa caa ttg gct gct gca tca			9144
Arg Asn Gly Gly Pro Ser Asp Ala Glu Gln Leu Ala Ala Ala Ser			
3035	3040	3045	
aca ggg gaa ctt cga ttt tct tac agt tta tta gaa aaa ttg att			9189
Thr Gly Glu Leu Arg Phe Ser Tyr Ser Leu Leu Glu Lys Leu Ile			
3050	3055	3060	
cat tac att gac aga gcg tct ata aac atg aca ctt tta aag cct			9234
His Tyr Ile Asp Arg Ala Ser Ile Asn Met Thr Leu Leu Lys Pro			
3065	3070	3075	
tca ggc aca ttt agc agg cgt tct agt ttc aaa atc tgt aca aga			9279
Ser Gly Thr Phe Ser Arg Arg Ser Ser Phe Lys Ile Cys Thr Arg			
3080	3085	3090	
gat att aaa ttt ttc tcc aaa gtt gtg cta ccg tta gtt gag aaa			9324
Asp Ile Lys Phe Phe Ser Lys Val Val Leu Pro Leu Val Glu Lys			
3095	3100	3105	
tat ttt agc act cat aga aat tac ttc ata acg gtt gcg aca gct			9369
Tyr Phe Ser Thr His Arg Asn Tyr Phe Ile Thr Val Ala Thr Ala			
3110	3115	3120	
tca agt gtt ttg ggt gca gct tcg tta aag gaa aaa gaa atg gtc			9414
Ser Ser Val Leu Gly Ala Ala Ser Leu Lys Glu Lys Glu Met Val			
3125	3130	3135	
gct agt tta ttt tgt aag ttg gca aat ctt ttg aga tct aag tta			9459
Ala Ser Leu Phe Cys Lys Leu Ala Asn Leu Leu Arg Ser Lys Leu			
3140	3145	3150	
atg gcc ttt gga gct gat gtc cgt ata acc gta cga tgt cta caa			9504
Met Ala Phe Gly Ala Asp Val Arg Ile Thr Val Arg Cys Leu Gln			
3155	3160	3165	
gtg ctt gtc aaa gct att gat gct aag tca ctc gta aaa aac tgt			9549
Val Leu Val Lys Ala Ile Asp Ala Lys Ser Leu Val Lys Asn Cys			
3170	3175	3180	
cct gag ttt att aga act tca atg ctt aca ttt ttc cat aac atc			9594
Pro Glu Phe Ile Arg Thr Ser Met Leu Thr Phe Phe His Asn Ile			
3185	3190	3195	
gct gat gat ttg gaa cat aca att caa aat ttg cat gat agt cgt			9639
Ala Asp Asp Leu Glu His Thr Ile Gln Asn Leu His Asp Ser Arg			
3200	3205	3210	
tat tgt tat ttg aga gga act cat ttg aaa aca tca act tca tta			9684
Tyr Cys Tyr Leu Arg Gly Thr His Leu Lys Thr Ser Thr Ser Leu			
3215	3220	3225	
ttt tat gtt aat gac gta att tta cca gtt tta tca tcg ctt ttt			9729
Phe Tyr Val Asn Asp Val Ile Leu Pro Val Leu Ser Ser Leu Phe			
3230	3235	3240	
gat cat tta gct gca tat gaa tat gga aac gag cta ttg tta aat			9774
Asp His Leu Ala Ala Tyr Glu Tyr Gly Asn Glu Leu Leu Leu Asn			
3245	3250	3255	
gaa att caa gta gca gct tat aaa atg ttg agt agt tta tat act			9819
Glu Ile Gln Val Ala Ala Tyr Lys Met Leu Ser Ser Leu Tyr Thr			
3260	3265	3270	
ctt ggc aca gat aca tct tta acg cat gat aga aaa tat tta aaa			9864
Leu Gly Thr Asp Thr Ser Leu Thr His Asp Arg Lys Tyr Leu Lys			
3275	3280	3285	
gta cag ttg gaa aga cat cgt ccg gcg ttt ggt agt tgc ttg ggt			9909
Val Gln Leu Glu Arg His Arg Pro Ala Phe Gly Ser Cys Leu Gly			

3290	gca ttt agt tca aca ttt cct	3295	gtg gct ttc ctt gaa cca cat ctg	9954
	Ala Phe Ser Ser Thr Phe Pro		Val Ala Phe Leu Glu Pro His Leu	
3305	aat aaa cac aat caa tat tcg	3310	ctt ctt aat cga ttt gct gac agt	9999
	Asn Lys His Asn Gln Tyr Ser		Leu Leu Asn Arg Phe Ala Asp Ser	
3320	tca ttg gaa gct cag gat ata	3325	atg tct aga atg gaa ggc act atg	10044
	Ser Leu Glu Ala Gln Asp Ile		Met Ser Arg Met Glu Gly Thr Met	
3335	cct act cta gaa act gta tta	3340	aat gaa gtt gac cag ttt gtc gaa	10089
	Pro Thr Leu Glu Thr Val Leu		Asn Glu Val Asp Gln Phe Val Glu	
3350	tca gaa aaa aca tat gct gat	3355	gca cct cac att att gat gtt att	10134
	Ser Glu Lys Thr Tyr Ala Asp		Ala Pro His Ile Ile Asp Val Ile	
3365	tta cct tta ttg tgt tca tac	3370	tta ccg tac tgg tgg gca caa ggt	10179
	Leu Pro Leu Leu Cys Ser Tyr		Leu Pro Tyr Trp Trp Ala Gln Gly	
3380	cca gat aat gtt gct ctg acc	3385	aca ggt aat cat gtt aca atg gtg	10224
	Pro Asp Asn Val Ala Leu Thr		Thr Gly Asn His Val Thr Met Val	
3395	acc agc gaa cat atg aac tgt	3400	cta tta aaa aat gtt tta aag tta	10269
	Thr Ser Glu His Met Asn Cys		Leu Leu Lys Asn Val Leu Lys Leu	
3410	ata aaa aaa aat att gga aat	3415	gat aat gcc cct tgg atg aca caa	10314
	Ile Lys Lys Asn Ile Gly Asn		Asp Asn Ala Pro Trp Met Thr Gln	
3425	ata gca gct tat aca caa caa	3430	ata att att aat tct tca gaa gaa	10359
	Ile Ala Ala Tyr Thr Gln Gln		Ile Ile Ile Asn Ser Ser Glu Glu	
3440	tta tta aaa gat cca ttt cta	3445	cca ctt gca gaa cga gtt aaa aaa	10404
	Leu Leu Lys Asp Pro Phe Leu		Pro Leu Ala Glu Arg Val Lys Lys	
3455	cgt aca gaa aca tta tac cat	3460	aaa gaa gaa tca tta aga gga ttt	10449
	Arg Thr Glu Thr Leu Tyr His		Lys Glu Glu Ser Leu Arg Gly Phe	
3470	ata aaa tca tct act gat gat	3475	acg tcc caa atc gaa gca caa ata	10494
	Ile Lys Ser Ser Thr Asp Asp		Thr Ser Gln Ile Glu Ala Gln Ile	
3485	caa gaa gat tgg caa ttg gtt	3490	gtt agg gat att tat gct ttt tat	10539
	Gln Glu Asp Trp Gln Leu Val		Val Arg Asp Ile Tyr Ala Phe Tyr	
3500	cca ctc ctc ata aaa tac gtg	3505	gat cct cag cgc aat cac tgg cta	10584
	Pro Leu Leu Ile Lys Tyr Val		Asp Pro Gln Arg Asn His Trp Leu	
3515	cgt aat aac ata tca aat gct	3520	gaa gat tta tac aat cat gtc tct	10629
	Arg Asn Asn Ile Ser Asn Ala		Glu Asp Leu Tyr Asn His Val Ser	
3530	gaa ata ttt aac att tgg tcc	3535	aaa tcg caa tac ttt tta cgt gaa	10674
	Glu Ile Phe Asn Ile Trp Ser		Lys Ser Gln Tyr Phe Leu Arg Glu	
3545	gaa caa aac ttt ata tct gca	3550	aat gaa att gat aac atg ata ctt	10719
	Glu Gln Asn Phe Ile Ser Ala		Asn Glu Ile Asp Asn Met Ile Leu	
3560	att atg cca acg gca act cgg	3565	aga tcg gct gtt ata tca gaa act	10764
	Ile Met Pro Thr Ala Thr Arg		Arg Ser Ala Val Ile Ser Glu Thr	
3575	tcg tta gga ggg tca tct gga	3580	aag aaa aag aaa aaa cac agg gat	10809
	Ser Leu Gly Gly Ser Ser Gly		Lys Lys Lys Lys Lys His Arg Asp	

3590	aaa aaa cgt gac aaa gaa aaa	3595	gaa att caa gct tca ttg atg gtg	3600	10854
Lys Lys Arg Asp Lys Glu Lys	Glu Ile Gln Ala Ser Leu Met Val				
3605	gct tgt ctt aaa cga tta ctg	3610	cca gtt ggt tta aat ttg ttc gcg	3615	10899
Ala Cys Leu Lys Arg Leu Leu	Pro Val Gly Leu Asn Leu Phe Ala				
3620	gga aga gaa caa gaa tta gtt	3625	caa cat tgc aag gat aga ttc tta	3630	10944
Gly Arg Glu Gln Glu Leu Val	Gln His Cys Lys Asp Arg Phe Leu				
3635	aaa aaa atg cca gat tat gat	3640	gtg ata caa ttt gtc aaa att caa	3645	10989
Lys Lys Met Pro Asp Tyr Asp	Val Ile Gln Phe Val Lys Ile Gln				
3650	ttg aca tta ccc gat aaa tta	3655	gac cca gct gac gaa atg tcc tgg	3660	11034
Leu Thr Leu Pro Asp Lys Leu	Asp Pro Ala Asp Glu Met Ser Trp				
3665	cag cac tat tta tac tcc aag	3670	tta gga agc aaa aaa gga aat act	3675	11079
Gln His Tyr Leu Tyr Ser Lys	Leu Gly Ser Lys Lys Gly Asn Thr				
3680	gaa att aaa cca caa caa gtc	3685	gac gag gta gcg gat aga att gtc	3690	11124
Glu Ile Lys Pro Gln Gln Val	Asp Glu Val Ala Asp Arg Ile Val				
3695	gct atg gct aaa gtt ctt tat	3700	gga ttg cat atg att gat cat cct	3705	11169
Ala Met Ala Lys Val Leu Tyr	Gly Leu His Met Ile Asp His Pro				
3710	cag ctt caa agc aag gcg act	3715	tat cga tct gtt gta tcg acg caa	3720	11214
Gln Leu Gln Ser Lys Ala Thr	Tyr Arg Ser Val Val Ser Thr Gln				
3725	cgt aag aga gcc gta att gct	3730	tgt ttc cga caa ctc tca ctc cac	3735	11259
Arg Lys Arg Ala Val Ile Ala	Cys Phe Arg Gln Leu Ser Leu His				
3740	gct ttg acc aga cac cgt gca	3745	gta aat ata ttc gtt cgt tcg ttt	3750	11304
Ala Leu Thr Arg His Arg Ala	Val Asn Ile Phe Val Arg Ser Phe				
3755	tac gaa ctt tgg ctt caa gat	3760	gaa aat att gga caa gaa gtt atg	3765	11349
Tyr Glu Leu Trp Leu Gln Asp	Glu Asn Ile Gly Gln Glu Val Met				
3770	att gaa gat ctc aca caa tca	3775	ttt gaa gaa gcg gaa ctt aaa aaa	3780	11394
Ile Glu Asp Leu Thr Gln Ser	Phe Glu Glu Ala Glu Leu Lys Lys				
3785	cgt gac aag gaa gaa gaa gaa	3790	gga atg gca gac cca tta aat caa	3795	11439
Arg Asp Lys Glu Glu Glu Glu	Gly Met Ala Asp Pro Leu Asn Gln				
3800	atg gtt aca act ttc tgc cga	3805	gga gcc atg act gaa aga agt ggt	3810	11484
Met Val Thr Thr Phe Cys Arg	Gly Ala Met Thr Glu Arg Ser Gly				
3815	gct tta caa gag gac cct ctt	3820	tac atg tct tat gct gat att ttg	3825	11529
Ala Leu Gln Glu Asp Pro Leu	Tyr Met Ser Tyr Ala Asp Ile Leu				
3830	gct aag tcc tgc ggc gaa gaa	3835	gaa gaa gaa ggt aat aac gaa gaa	3840	11574
Ala Lys Ser Cys Gly Glu Glu	Glu Glu Glu Gly Asn Asn Glu Glu				
3845	gaa ggt tca aat ggt aac gga	3850	gat gaa gaa ggc ggt gct tct atc	3855	11619
Glu Gly Ser Asn Gly Asn Gly	Asp Glu Glu Gly Gly Ala Ser Ile				
3860	cat gag caa gaa atg gaa aaa	3865	caa aag ctt ttg ttt cac caa gct	3870	11664
His Glu Gln Glu Met Glu Lys	Gln Lys Leu Leu Phe His Gln Ala				
3875	cga ttg gct aac cgt ggt gtc	3880	gca gaa atg gtt tta tta cac ata	3885	11709
Arg Leu Ala Asn Arg Gly Val	Ala Glu Met Val Leu Leu His Ile				

3890	tca gct tgc aaa ggt ata	3895	ccc agt gaa atg gtt atg	3900	aaa acg ctt	11754
	Ser Ala Cys Lys Gly Ile		Pro Ser Glu Met Val Met		Lys Thr Leu	
3905	caa ttg gga atc gca gtt	3910	ctc cgt ggt ggt aat tta	3915	gac att caa	11799
	Gln Leu Gly Ile Ala Val		Leu Arg Gly Gly Asn Leu		Asp Ile Gln	
3920	atg gga atg tta aat cat	3925	tta aaa gaa aag aaa gat	3930	gtt gga ttt	11844
	Met Gly Met Leu Asn His		Leu Lys Glu Lys Lys Asp		Val Gly Phe	
3935	ttt act tca gtt gct ggt	3940	tta atg aac tca tgc agc	3945	gtt ctt gat	11889
	Phe Thr Ser Val Ala Gly		Leu Met Asn Ser Cys Ser		Val Leu Asp	
3950	ttg gac gct ttt gag aga	3955	aat acc aaa gca gaa ggt	3960	ttg gga gta	11934
	Leu Asp Ala Phe Glu Arg		Asn Thr Lys Ala Glu Gly		Leu Gly Val	
3965	gga tgc gaa ggt gct gct	3970	ggt gaa aaa aat atg cat	3975	gat gca gag	11979
	Gly Ser Glu Gly Ala Ala		Gly Glu Lys Asn Met His		Asp Ala Glu	
3980	ttc acg tgt act cta ttt	3985	aga ttt att caa tta act	3990	tgt gaa gga	12024
	Phe Thr Cys Thr Leu Phe		Arg Phe Ile Gln Leu Thr		Cys Glu Gly	
3995	cat aat tta gaa tgg caa	4000	aat tgt tta aga acc caa	4005	gca gga aat	12069
	His Asn Leu Glu Trp Gln		Asn Cys Leu Arg Thr Gln		Ala Gly Asn	
4010	acc aca act gta aat gtt	4015	gca att tgt aca gtg gat	4020	tat tta ctt	12114
	Thr Thr Thr Val Asn Val		Ala Ile Cys Thr Val Asp		Tyr Leu Leu	
4025	agg ctt cag gaa tct ata	4030	atg gat ttt tat tgg cat	4035	tat tgc agt	12159
	Arg Leu Gln Glu Ser Ile		Met Asp Phe Tyr Trp His		Tyr Ser Ser	
4040	aaa gag tta atc gat cca	4045	gca gga aaa gca aat ttc	4050	ttc aaa gca	12204
	Lys Glu Leu Ile Asp Pro		Ala Gly Lys Ala Asn Phe		Phe Lys Ala	
4055	atc ggt gtc gcc agc caa	4060	gtg ttt aat aca cta tcc	4065	gaa gta att	12249
	Ile Gly Val Ala Ser Gln		Val Phe Asn Thr Leu Ser		Glu Val Ile	
4070	caa gga cca tgt act caa	4075	aat caa cag gcc cta gct	4080	cat tcc agg	12294
	Gln Gly Pro Cys Thr Gln		Asn Gln Gln Ala Leu Ala		His Ser Arg	
4085	ttg tgg gat gct gtt gga	4090	ggg ttt ttg ttt tta ttt	4095	tca cac atg	12339
	Leu Trp Asp Ala Val Gly		Gly Phe Leu Phe Leu Phe		Ser His Met	
4100	caa gat aaa tta tgc aaa	4105	cat tct agt caa gta gat	4110	tta cta aaa	12384
	Gln Asp Lys Leu Ser Lys		His Ser Ser Gln Val Asp		Leu Leu Lys	
4115	gaa ctt ttg aat tta caa	4120	aaa gat atg att acg atg	4125	atg ctg tca	12429
	Glu Leu Leu Asn Leu Gln		Lys Asp Met Ile Thr Met		Met Leu Ser	
4130	atg tta gaa gga aat gtt	4135	gtt aat gga aca att ggt	4140	aaa caa atg	12474
	Met Leu Glu Gly Asn Val		Val Asn Gly Thr Ile Gly		Lys Gln Met	
4145	gtt gac act cta gta gag	4150	tcg gcg tca aat gtc gag	4155	ttg ata ttg	12519
	Val Asp Thr Leu Val Glu		Ser Ala Ser Asn Val Glu		Leu Ile Leu	
4160	aaa tat ttt gac atg ttc	4165	ctg aaa ctt aaa gat tta	4170	acg agt tca	12564
	Lys Tyr Phe Asp Met Phe		Leu Lys Leu Lys Asp Leu		Thr Ser Ser	
4175	aca agc ttt acg gaa att	4180	gac ccc aat aac gat ggt	4185	ttg gta cat	12609
	Thr Ser Phe Thr Glu Ile		Asp Pro Asn Asn Asp Gly		Trp Val His	

4190	ccc aaa	gat ttt	aaa gaa	aaa	4195	atg gaa	caa caa	aaa	4200	agt tat	act	12654
Pro Lys	Asp Phe	Lys Glu	Lys	Met	Glu Gln	Gln Lys	Ser Tyr	Thr				
4205	gcg gag	gaa att	gaa ttt	atg	4210	tta caa	tgt tgt	gaa	4215	tct aat	cat	12699
Ala Glu	Glu Ile	Glu Phe	Met	Leu	Gln Cys	Cys Glu	Ser Asn	His				
4220	gat gga	aaa att	gat tac	att	4225	ggc ttc	act gat	caa	4230	ttc cac	gag	12744
Asp Gly	Lys Ile	Asp Tyr	Ile	Gly	Phe Thr	Asp Gln	Phe His	Glu				
4235	cca tct	aaa gaa	att ggt	ttt	4240	aat ctt	gcc gta	tta	4245	tta act	aat	12789
Pro Ser	Lys Glu	Ile Gly	Phe	Asn	Leu Ala	Val Leu	Leu Thr	Asn				
4250	cta tca	gaa cat	atg cca	aat	4255	gaa cct	aga tta	aca	4260	aga ttc	cta	12834
Leu Ser	Glu His	Met Pro	Asn	Glu	Pro Arg	Leu Thr	Arg Phe	Leu				
4265	gaa aca	gct agc	agt gtt	ttg	4270	aac tat	ttc caa	ccg	4275	ttc ctg	ggt	12879
Glu Thr	Ala Ser	Ser Val	Leu	Asn	Tyr Phe	Gln Pro	Phe Leu	Gly				
4280	aga att	gaa att	ctt gga	gga	4285	agt aag	cgt ata	gaa	4290	cgg gtg	tac	12924
Arg Ile	Glu Ile	Leu Gly	Gly	Ser	Lys Arg	Ile Glu	Arg Val	Tyr				
4295	ttt gaa	att aaa	gaa tca	aat	4300	atc gaa	cag tgg	tta	4305	aaa cct	caa	12969
Phe Glu	Ile Lys	Glu Ser	Asn	Ile	Glu Gln	Trp Leu	Lys Pro	Gln				
4310	att agg	gaa tct	aaa cga	gcg	4315	ttc ttt	tat tca	atc	4320	gtt acc	gag	13014
Ile Arg	Glu Ser	Lys Arg	Ala	Phe	Phe Tyr	Ser Ile	Val Thr	Glu				
4325	ggt ggt	gat aaa	gaa aaa	tta	4330	gaa gca	ttc gtt	aat	4335	ttc tgt	gag	13059
Gly Gly	Asp Lys	Glu Lys	Leu	Glu	Ala Phe	Val Asn	Phe Cys	Glu				
4340	gat gct	ata ttt	gaa atg	caa	4345	cac gct	agt ggt	ctt	4350	atg gca	gtc	13104
Asp Ala	Ile Phe	Glu Met	Gln	His	Ala Ser	Gly Leu	Met Ala	Val				
4355	gat gac	gga tcc	ggt ata	ggt	4360	ggt gga	aaa tct	aga	4365	aaa aca	gct	13149
Asp Asp	Gly Ser	Gly Ile	Gly	Gly	Gly Lys	Ser Arg	Lys Thr	Ala				
4370	tac att	tat ctt	gca gat	gac	4375	gaa gaa	aac aag	acg	4380	gca aaa	gat	13194
Tyr Ile	Tyr Leu	Ala Asp	Asp	Glu	Glu Asn	Lys Thr	Ala Lys	Asp				
4385	ccc att	cga aga	ggc ata	cag	4390	gcc atc	aaa tat	gga	4395	ttc caa	cta	13239
Pro Ile	Arg Arg	Gly Ile	Gln	Ala	Ile Lys	Tyr Gly	Phe Gln	Leu				
4400	ttg ttt	ttc gtg	ttg tca	ccc	4405	act aat	att aaa	aac	4410	aaa atc	aat	13284
Leu Phe	Phe Val	Leu Ser	Pro	Thr	Asn Ile	Lys Asn	Lys Ile	Asn				
4415	gaa att	caa caa	atg agt	ttc	4420	gtt gaa	ctg atc	act	4425	tcg ttt	ttc	13329
Glu Ile	Gln Gln	Met Ser	Phe	Val	Glu Leu	Ile Thr	Ser Phe	Phe				
4430	aaa ctc	tgg ttt	tat tta	ata	4435	ttc tac	act gga	tac	4440	agt gga	gtt	13374
Lys Leu	Trp Phe	Tyr Leu	Ile	Phe	Tyr Thr	Gly Tyr	Ser Gly	Val				
4445	tat gtg	tta agg	tat ata	tct	4450	cgt att	ctc atg	caa	4455	cta atg	agt	13419
Tyr Val	Leu Arg	Tyr Ile	Ser	Arg	Ile Leu	Met Gln	Leu Met	Ser				
4460	ggc acg	caa tcc	gaa gaa	aca	4465	act gta	gaa gtt	gta	4470	gaa aaa	aga	13464
Gly Thr	Gln Ser	Glu Glu	Thr	Thr	Val Glu	Val Val	Glu Lys	Arg				
4475	gcc gga	tcg ttc	aga atg	cta	4480	cct gca	tta cca	tct	4485	tcg gga	gta	13509
Ala Gly	Ser Phe	Arg Met	Leu	Pro	Ala Leu	Pro Ser	Ser Gly	Val				



4490	gat gaa ccg ccg tcc act tta	4495	ata gac agt agt aat atg aga aaa	13554
Asp Glu Pro Pro Ser Thr	Leu Ile Asp Ser Ser Asn Met Arg Lys			
4505	aat tct ggt gca cct gat tca	4510	aaa cat gta aaa tca acc aca gtc	13599
Asn Ser Gly Ala Pro Asp	Ser Lys His Val Lys Ser Thr Thr Val			
4520	gga gac gat aaa gac gaa acg	4525	tcg aca gaa aat cat gaa aaa gaa	13644
Gly Asp Asp Lys Asp Glu	Thr Ser Thr Glu Asn His Glu Lys Glu			
4535	gac ggt gtg aaa tcg gaa gat	4540	aac tcg gaa cta caa gca tcg ttt	13689
Asp Gly Val Lys Ser Glu	Asp Asn Ser Glu Leu Gln Ala Ser Phe			
4550	ggt gat cta tta gta ggc gag	4555	tcg gct aga aaa gat tct att gcc	13734
Val Asp Leu Leu Val Gly	Glu Ser Ala Arg Lys Asp Ser Ile Ala			
4565	ggc cct gaa gtt ttg gct caa	4570	caa caa gct gtt atg gca gct gta	13779
Gly Pro Glu Val Leu Ala	Gln Gln Ala Val Met Ala Ala Val			
4580	gaa gca gaa atc aaa caa aag	4585	aac tct gtc gaa aat cct agt gca	13824
Glu Ala Glu Ile Lys Gln	Lys Asn Ser Val Glu Asn Pro Ser Ala			
4595	ttt tct acg atc gat atc aac	4600	gca tac act cac cgt gct tta agt	13869
Phe Ser Thr Ile Asp Ile	Asn Ala Tyr Thr His Arg Ala Leu Ser			
4610	ttt ttg gca aga aac ttt tat	4615	aat tta aaa tac gtt gca cta gta	13914
Phe Leu Ala Arg Asn Phe	Tyr Asn Leu Lys Tyr Val Ala Leu Val			
4625	tta gca ttc tgc att aat ttc	4630	ata cta ctc ttt tac aag gtg aca	13959
Leu Ala Phe Cys Ile Asn	Phe Ile Leu Leu Phe Tyr Lys Val Thr			
4640	act ctt gcc gaa gat tta tca	4645	gac gac gga gac agc aaa gat ttt	14004
Thr Leu Ala Glu Asp Leu	Ser Asp Asp Gly Asp Ser Lys Asp Phe			
4655	gca ctg ggt tcg gct ggc ata	4660	agc aat gac gat atc gac gat tcg	14049
Ala Leu Gly Ser Ala Gly	Ile Ser Asn Asp Asp Ile Asp Asp Ser			
4670	aat agt acc gaa ata gcc gat	4675	gac gat gga gca ttg gaa ctt gta	14094
Asn Ser Thr Glu Ile Ala	Asp Asp Asp Gly Ala Leu Glu Leu Val			
4685	cat gtc aac gag gac ttc ttt	4690	tac atg gca cac gtt atg cga ctt	14139
His Val Asn Glu Asp Phe	Phe Tyr Met Ala His Val Met Arg Leu			
4700	gcg gct ttg ctt cac tcg ctg	4705	gcc tca tta gca atg ttg att gca	14184
Ala Ala Leu Leu His Ser	Ala Ser Leu Ala Met Leu Ile Ala			
4715	tac tac cat ttg aaa gtg cca	4720	ttg gcc ata ttc aaa cgg gaa aaa	14229
Tyr Tyr His Leu Lys Val	Pro Leu Ala Ile Phe Lys Arg Glu Lys			
4730	gaa atc gcg agg aga tta gaa	4735	ttc gac ggc cta tac att gtt gaa	14274
Glu Ile Ala Arg Arg Leu	Glu Phe Asp Gly Leu Tyr Ile Val Glu			
4745	caa cca gaa gac gat gac ata	4750	aaa tca cac tgg gac aag ttg gtg	14319
Gln Pro Glu Asp Asp Asp	Ile Lys Ser His Trp Asp Lys Leu Val			
4760	atc tcc gcc aag tcg ttt ccg	4765	gtg aat tat tgg gac aag ttt gca	14364
Ile Ser Ala Lys Ser Phe	Pro Val Asn Tyr Trp Asp Lys Phe Ala			
4775	aag aaa aaa gtt cgt caa aag	4780	tat agt gag acg tac gat ttt gat	14409
Lys Lys Lys Val Arg Gln	Lys Tyr Ser Glu Thr Tyr Asp Phe Asp			

4790	tcc ata agt aat tta ttg ggc	4795	atg gaa aag aca tca ttt agc act	14454
	Ser Ile Ser Asn Leu Leu Gly		Met Glu Lys Thr Ser Phe Ser Thr	
4805	caa gaa aat gaa gaa cgg acg	4810	ggc tta ata aat ttt gtt att aat	14499
	Gln Glu Asn Glu Glu Arg Thr		Gly Leu Ile Asn Phe Val Ile Asn	
4820	atc gat tgg aga tat caa gta	4825	tgg aaa gct gga gtc aca ata aca	14544
	Ile Asp Trp Arg Tyr Gln Val		Trp Lys Ala Gly Val Thr Ile Thr	
4835	gac aac gca ttc ctg tac agt	4840	ctg tgg tat ttc aca ttt tcg att	14589
	Asp Asn Ala Phe Leu Tyr Ser		Leu Trp Tyr Phe Thr Phe Ser Ile	
4850	ctg gga aac ttt aac aat ttc	4855	ttt ttt gcc gct cat cta ctg gac	14634
	Leu Gly Asn Phe Asn Asn Phe		Phe Phe Ala Ala His Leu Leu Asp	
4865	gtg gcc gtt ggc ttt aaa acg	4870	cta aga act atc ttg cag tcc gta	14679
	Val Ala Val Gly Phe Lys Thr		Leu Arg Thr Ile Leu Gln Ser Val	
4880	act cat aac gga aaa cag cta	4885	gta ttg acc gtt ttg ctt tta acg	14724
	Thr His Asn Gly Lys Gln Leu		Val Leu Thr Val Leu Leu Leu Thr	
4895	atc ata gta tac ata tac aca	4900	gtt att gca ttt aac ttc ttc agg	14769
	Ile Ile Val Tyr Ile Tyr Thr		Val Ile Ala Phe Asn Phe Phe Arg	
4910	aag ttc tat atc cga gaa gaa	4915	gat gac gaa gtg gat aaa aaa tgt	14814
	Lys Phe Tyr Ile Arg Glu Gly		Asp Asp Glu Val Asp Lys Lys Cys	
4925	cac gac atg tta acg tgt ttc	4930	gtg ttc cat ctt tac aaa ggt gtg	14859
	His Asp Met Leu Thr Cys Phe		Val Phe His Leu Tyr Lys Gly Val	
4940	aga gcc ggt ggt ggt atc gga	4945	gac gaa atc gga tca cct gac ggc	14904
	Arg Ala Gly Gly Gly Ile Gly		Asp Glu Ile Gly Ser Pro Asp Gly	
4955	gat gat tac gaa gtt tac aga	4960	ata atg ttt gat att aca ttc ttt	14949
	Asp Asp Tyr Glu Val Tyr Arg		Ile Met Phe Asp Ile Thr Phe Phe	
4970	ttc ttc gtc atc att ata ctt	4975	ttg gcc atc att caa ggt ttg atc	14994
	Phe Phe Val Ile Ile Ile Leu		Leu Ala Ile Ile Gln Gly Leu Ile	
4985	att gac gcg ttc gga gag ctg	4990	cgt gac caa ctg gaa agc gtc aaa	15039
	Ile Asp Ala Phe Gly Glu Leu		Arg Asp Gln Leu Glu Ser Val Lys	
5000	gag gac atg gaa tcc aat tgt	5005	ttc atc tgc ggc atc ggc aaa gat	15084
	Glu Asp Met Glu Ser Asn Cys		Phe Ile Cys Gly Ile Gly Lys Asp	
5015	tat ttc gac aaa gtt ccg cac	5020	ggg ttt gac acg cac gtt caa gaa	15129
	Tyr Phe Asp Lys Val Pro His		Gly Phe Asp Thr His Val Gln Glu	
5030	gaa cac aac ctt gct aac tac	5035	atg ttt ttc cta atg cat ctg atc	15174
	Glu His Asn Leu Ala Asn Tyr		Met Phe Phe Leu Met His Leu Ile	
5045	aac aaa ccg gac acg gaa tat	5050	acc ggc caa gaa acg tac gtc tgg	15219
	Asn Lys Pro Asp Thr Glu Tyr		Thr Gly Gln Glu Thr Tyr Val Trp	
5060	aac atg tat cag caa cgg tgt	5065	tgg gac ttc ttc ccg gta gga gac	15264
	Asn Met Tyr Gln Gln Arg Cys		Trp Asp Phe Phe Pro Val Gly Asp	
5075	tgt ttc cgt aaa caa tac gaa	5080	gag gag ctt ggc ggc gga gga ggc	15309
	Cys Phe Arg Lys Gln Tyr Glu		Glu Glu Leu Gly Gly Gly Gly Gly	

5090  
gtc tga  
Val

5095

5100

15315

<210> 6  
<211> 5104  
<212> PRT  
<213> *Periplaneta americana*

<400> 6  
Met Ala Asp Ser Glu Gly Ser Ser Glu Gln Asp Asp Val Ser Phe Leu  
1 5 10 15  
Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg  
20 25 30  
Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Tyr Leu Glu  
35 40 45  
Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe  
50 55 60  
Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
65 70 75 80  
Ala Thr Ser Ser Gln Glu Gly Lys Gly Gly Thr Gly Ser Gly His Arg  
85 90 95  
Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln Asn Ser Asp  
100 105 110  
Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser  
115 120 125  
Phe Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp  
130 135 140  
Thr Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
145 150 155 160  
Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu  
165 170 175  
His Thr Ala Lys Glu Asn Glu Leu Ser Val Val Asn Ala Ser Phe His  
180 185 190  
Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met  
195 200 205  
Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His  
210 215 220  
Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Ser Asn Val Ser  
225 230 235 240  
Gly Gln Asn Ile Val Ile Tyr Glu Gly Gly Ser Val Met Ser Gln Ala  
245 250 255  
Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly  
260 265 270  
Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Leu Thr Thr Gly  
275 280 285  
Arg Tyr Leu Gly Val Asn Glu Asn Asn Glu Leu His Leu Val Cys Arg  
290 295 300  
Glu Glu Ala Thr Thr Ala Ser Ser Thr Phe Phe Leu Arg Gln Glu Lys  
305 310 315 320  
Asp Asp Gln Lys Ile Ile Leu Glu Asp Lys Asp Leu Glu Val Ile Gly  
325 330 335  
Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val Leu Val Gln His Ser  
340 345 350  
Asp Thr Gly Leu Trp Leu Thr Tyr Lys Ser Tyr Glu Thr Lys Lys Lys  
355 360 365  
Gly Val Gly Lys Val Glu Glu Lys Gln Ala Val Leu His Glu Glu Gly  
370 375 380  
Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser

385					390					395					400
Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe
				405					410					415	
Ile	Ser	Gly	Leu	Glu	Asn	Leu	Gln	Ser	Asn	Arg	Arg	Ser	Ser	Leu	Phe
			420					425					430		
Cys	Ser	Phe	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu
		435					440				445				
Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Glu	Glu	Asp	Met	Glu	His	Glu	Glu	Lys
	450					455					460				
Gln	Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu
465					470					475					480
Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Val	Asn	Ile
				485				490						495	
Ile	Thr	Ser	Gln	Gly	Phe	Met	Val	Ser	Leu	Ala	Gly	Asp	Glu	Ser	Gly
			500					505					510		
Gln	Ser	Trp	Asp	Val	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala
		515					520					525			
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Thr	Asn
	530					535					540				
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu
545					550					555					560
Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro
			565						570					575	
Glu	Ala	Leu	Asn	Met	Met	Lys	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser
			580					585					590		
Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys
		595					600				605				
Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn
	610					615					620				
Ile	Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu
625					630					635					640
Leu	Val	Asp	His	Val	Ala	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	His
			645						650					655	
Val	Ser	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Tyr	Glu	Val	Ala	Ile
			660					665					670		
Asp	His	Val	Glu	Gln	Thr	Thr	His	Leu	Asn	Pro	His	Ile	Arg	Ile	Gly
		675					680					685			
Trp	Ala	Asn	Thr	Ala	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Lys
	690					695					700				
Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp
705					710					715					720
Gly	Ser	Tyr	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Ser	Glu	Val	Met	Pro	Gly
			725						730					735	
Ser	Glu	Ile	Ser	Asn	Ile	Lys	Lys	Gly	Asp	Val	Ile	Gly	Cys	Ala	Leu
			740					745					750		
Asp	Leu	Thr	Ile	Pro	Ile	Ile	Thr	Phe	Thr	Leu	Asn	Gly	Gln	Leu	Val
	755						760					765			
Gln	Gly	Ala	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val
	770					775					780				
Ile	Ser	Cys	Ser	Ser	Lys	Val	Gly	Cys	Arg	Phe	Leu	Leu	Gly	Gly	Asp
785					790					795					800
His	Gly	Arg	Leu	Lys	Phe	Thr	Pro	Pro	Asp	Glu	Phe	Ser	Pro	Leu	Phe
			805						810					815	
Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Thr	Ile	Asp	Pro	Cys	Phe	Tyr
			820					825					830		
Phe	Gly	Asn	Leu	Ser	Lys	Cys	Val	Leu	Thr	Gly	Pro	Trp	Tyr	Val	Glu
		835					840					845			
Asp	Asp	Thr	Ala	Phe	Val	Pro	Asn	Pro	Val	Asp	Thr	Ser	Met	Val	Thr
	850					855					860				
Leu	Pro	Ser	Tyr	Ile	Glu	Asn	Ile	Lys	Asp	Lys	Leu	Ala	Glu	Asn	Ile

865		870		875		880									
His	Glu	Met	Trp	Ala	Met	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Gln	Tyr	Gly
		885		890		895									
Asp	Lys	Arg	Asn	Asp	Thr	Arg	Lys	Tyr	His	Pro	Cys	Leu	Ile	Gln	Phe
		900		905		910									
Asp	Lys	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ser	Gln	Leu	Ala	Val
		915		920		925									
Gln	Thr	Leu	Lys	Thr	Val	Ile	Ala	Leu	Gly	Tyr	His	Ile	Ser	Ile	Asp
		930		935		940									
Asn	Pro	Pro	Ser	Arg	Ile	Lys	Thr	Val	Arg	Leu	Pro	Asn	Glu	Pro	Phe
945		950		955		960									
Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala	Ile
		965		970		975									
Asn	Leu	Ser	Gly	Lys	Met	Glu	Glu	Leu	Ile	Asp	Gln	Leu	Ala	Glu	Asn
		980		985		990									
Thr	His	Asn	Leu	Trp	Ala	Lys	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	Tyr
		995		1000		1005									
Gly	Leu	Asn	Glu	Glu	Leu	Gln	Met	Leu	Arg	Ser	Pro	His	Leu	Val	
1010		1015		1020		1025									
Pro	Tyr	Ser	Lys	Val	Asp	Asp	Ala	Ile	Lys	Lys	Ala	Asn	Arg	Asp	
1025		1030		1035		1040									
Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr	Asn	
1040		1045		1050		1055									
Leu	Asp	Pro	Pro	Thr	Gly	Glu	Thr	Asn	Glu	Ala	Thr	Leu	Leu	Thr	
1055		1060		1065		1070									
Asp	Glu	Asn	Thr	Asn	Arg	Tyr	Leu	Thr	Phe	Arg	Thr	Tyr	Arg	Ala	
1070		1075		1080		1085									
Glu	Lys	Thr	Tyr	Ala	Val	Ala	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe	
1085		1090		1095		1100									
Glu	Ile	Leu	Thr	Asn	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Phe	
1100		1105		1110		1115									
Thr	Cys	Ser	Pro	Gly	Tyr	Gln	Ile	Gly	Ser	Asp	Glu	Asn	Ser	Trp	
1115		1120		1125		1130									
Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Ile	Tyr	Met	Gly	Thr	Ala	
1130		1135		1140		1145									
Glu	Ser	Phe	Gly	Arg	Gln	Trp	Gln	Val	Gly	Asp	Val	Val	Gly	Val	
1145		1150		1155		1160									
Phe	Leu	Asp	Leu	Met	Asp	His	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly	
1160		1165		1170		1175									
Glu	Leu	Leu	Met	Asp	Thr	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ser	Glu	
1175		1180		1185		1190									
Val	Gln	Gly	Glu	Gly	Phe	Val	Pro	Ala	Phe	Thr	Leu	Gly	Leu	Gly	
1190		1195		1200		1205									
Gln	Lys	Ala	Lys	Leu	Thr	Phe	Gly	Gln	Asp	Val	Asn	Ser	Leu	Lys	
1205		1210		1215		1220									
Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe	Cys	
1220		1225		1230		1235									
Val	Asn	Met	Lys	Arg	Pro	Val	Thr	Tyr	Trp	Tyr	Thr	Lys	Asp	Gln	
1235		1240		1245		1250									
Pro	Ile	Phe	Glu	Asn	Thr	Asp	Asp	Phe	Ser	Ser	Val	Ile	Asp	Val	
1250		1255		1260		1265									
Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu	Lys	Ile	
1265		1270		1275		1280									
Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Arg	Ala	Asn	Trp	Glu	Phe	
1280		1285		1290		1295									
Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	Leu	Pro	Asn	Phe	Ile	Asp	
1295		1300		1305		1310									
Glu	Gln	Glu	Lys	Gln	Arg	Arg	Trp	Gln	Glu	Ile	Arg	Ile	Arg	Gln	
1310		1315		1320		1325									
His	Arg	Leu	Leu	Ser	Gln	Ser	Glu	His	Ala	Thr	Pro	Ala	His	Ile	

1325	Glu Gln Ile Met Lys Ser	1330	Gly Phe Ser Met Ser	1335	Asp Ile Lys Gly
1340	Leu His Arg Gly Tyr Ser	1345	Asp Asp Pro Val Glu	1350	Asn Asp Glu Met
1355	Met Pro Asn Thr Ala Pro	1360	Leu Pro Pro Arg Gly	1365	Lys Asn Gln Pro
1370	Pro Pro Pro Arg Pro Pro	1375	Arg Lys Gly Ser Leu	1380	Ser Arg His Asp
1385	Asp Leu Thr Ile Glu Asn	1390	Asp Gly Lys Leu Asn	1395	Arg Ser Ser Ser
1400	Glu Leu Asn Phe Asn Ile	1405	Tyr Asn Gln Gln Asn	1410	Gly Asn Gly Gln
1415	Asp Ile Asn Lys Asp Asp	1420	Lys Lys Lys Arg Gly	1425	Arg Ser Pro Phe
1430	Arg Phe Phe Ser Arg Lys	1435	Lys Glu Gly Pro Ser	1440	Asp Asn Pro Lys
1445	Arg Ala Lys Thr Pro Asp	1450	Pro Ala Arg Asn Val	1455	Val Arg Ser Arg
1460	Asn Ala Ala His Arg Pro	1465	Asn Thr Leu Asn Glu	1470	Arg Ile Thr Pro
1475	Gln Ile Arg Val Ser Gln	1480	Met Asp Leu Lys Leu	1485	Val Pro Pro Ala
1490	Ile Pro Asp Arg Pro Gly	1495	Gly Pro Lys Ala Met	1500	Ser Phe Thr Pro
1505	Ser Ser Ala Gly Ile Glu	1510	Phe Val Gly Asn Glu	1515	Ile Phe Asp Leu
1520	Glu Cys Leu Lys Leu Ile	1525	Asn Glu Tyr Tyr Tyr	1530	Gly Val Arg Ile
1535	Phe Pro Gly Gln Asp Pro	1540	Thr His Val Tyr Val	1545	Gly Trp Val Thr
1550	Thr Gln Phe His Leu His	1555	Ser Lys Asp Phe Ser	1560	Gln Asn His Val
1565	Arg Lys Ser Thr Val Thr	1570	Ile Val Asp Glu His	1575	Asn Arg Ile Leu
1580	Glu Ser Ile Asp Arg Gln	1585	Ser Cys Tyr Met Val	1590	Arg Ser Asp Glu
1595	Leu Tyr Asn Glu Val Thr	1600	Asn Asp Ser Ser Gly	1605	Lys Gly Ala Ser
1610	Gln Gly Met Ala Ile Gly	1615	Cys Phe Ile Asp Ile	1620	Ala Thr Gly Val
1625	Met Ser Phe Thr Cys Glu	1630	Gly Lys Glu Thr Ser	1635	Phe Lys Phe Lys
1640	Met Glu Pro Asp Ile Lys	1645	Leu Phe Pro Ala Ile	1650	Phe Val Glu Ala
1655	Ser Ser Lys Glu Ile Leu	1660	Gln Ile Glu Leu Gly	1665	Arg Thr Ser Thr
1670	Thr Leu Pro Leu Ser Ala	1675	Ala Val Leu Gln Asn	1680	Ser Glu Arg His
1685	Val Leu Pro Gln Phe Pro	1690	Pro Arg Leu Lys Val	1695	Gln Cys Leu Arg
1700	Pro His Gln Trp Ala Arg	1705	Val Pro Asn Asp Ser	1710	Leu His Ile His
1715	Thr Leu Lys Leu Ser Asp	1720	Ile Arg Gly Trp Ser	1725	Ile Leu Cys Glu
1730	Asp Pro Val Ser Met Ile	1735	Ala Leu His Ile Pro	1740	Glu Glu Asp Arg
1745	Cys Ile Asp Ile Leu Glu	1750	Leu Ile Glu Met Glu	1755	Lys Leu Leu Ser
1760	Phe His Ala His Thr Leu	1765	Thr Leu Tyr Ala Ala	1770	Val Cys Tyr Gln

1775	Ala Asn Tyr Arg Ala Ala	1780	His Ile Leu Cys Thr	1785	His Val Asn Gln
1790	Lys Gln Leu Leu Tyr Ala	1795	Ile Cys Ser Glu Tyr	1800	Met Ser Gly Pro
1805	Leu Arg Gln Gly Phe Tyr	1810	Asp Leu Leu Ile Ala	1815	Leu His Leu Glu
1820	Ser His Ala Thr Thr Met	1825	Glu Val Cys Lys Asn	1830	Glu Tyr Ile Ile
1835	Pro Leu Gly His Glu Leu	1840	Thr Ala Leu Tyr Asp	1845	Asp Pro Gln Met
1850	Gly His Ser Leu Arg Ser	1855	Leu Gln Thr Glu Ser	1860	Val Arg Pro Gln
1865	Met Lys Met Thr Glu Ile	1870	Ser Asp Val Ile Asp	1875	Asn Val Arg Asn
1880	Leu Tyr Ser Pro Tyr Phe	1885	Pro Leu Gln Val Val	1890	Arg Glu Tyr Val
1895	Met Ala Ala Leu Glu Glu	1900	Ala Val Leu Val Asn	1905	Gln Val His Asn
1910	Arg Asp Pro Ile Gly Gly	1915	Ser Asn Glu Asn Leu	1920	Phe Leu Pro Leu
1925	Leu Lys Leu Val Asp Arg	1930	Leu Leu Leu Val Gly	1935	Met Leu Arg Asp
1940	Glu Asp Val Glu Lys Leu	1945	Leu Ile Met Ile Asn	1950	Pro Glu Thr Trp
1955	Asp Pro Glu Phe Gln Lys	1960	Asp Gly Pro Asp Glu	1965	His Arg Lys Gly
1970	Leu Leu His Met Lys Met	1975	Ala Glu Gly Ala Lys	1980	Leu Gln Met Cys
1985	Tyr Leu Leu His His Leu	1990	Cys Asp Ile Gln Leu	1995	Arg His Arg Val
2000	Glu Ser Ile Ile Ser Phe	2005	Ser Tyr Gln Phe Val	2010	Asn Asp Ile Gln
2015	Ile Asp Gln Leu Arg Arg	2020	Tyr Asn Glu Ile Lys	2025	Gln Ser Asp Leu
2030	Pro Ser Ala Val Ala Ala	2035	Lys Thr Arg Glu Phe	2040	Arg Cys Pro
2045	Pro Arg Glu Gln Met Asn	2050	Ala Ile Leu Gly Phe	2055	Lys Asn Leu Asp
2060	Ser Asp Asp Lys Glu Asn	2065	Cys Leu Ile Gly Asp	2070	Glu Leu Arg Glu
2075	Arg Met Asn Glu Phe Asn	2080	Glu Lys Leu Met Lys	2085	Gln Ile Leu Leu
2090	Val Ala Leu Gln Glu Ser	2095	Glu Asp Asp Lys Leu	2100	Asp Leu Asn Asn
2105	Ile Asn Arg Glu Gly Lys	2110	Ile Lys Gln Phe Tyr	2115	Asn Phe Ile Asn
2120	Ala Val Lys Asp Glu Ala	2125	Asn Glu Asn Gly Leu	2130	Asn Glu His Glu
2135	Lys Lys Ile Pro Glu Glu	2140	Ile Phe Arg Lys Val	2145	Leu Ile Thr Thr
2150	Ile Val Ser Trp Ala Glu	2155	Glu Thr Gln Ile Glu	2160	Thr Pro Lys Leu
2165	Val Arg Glu Met Phe Ser	2170	Leu Leu Val Arg Gln	2175	Tyr Asp Ser Val
2180	Gly Glu Leu Ile Arg Ala	2185	Leu Glu Lys Thr Tyr	2190	Val Ile Asn Phe
2195	Lys Thr Lys Glu Asp Val	2200	Ala Gln Met Trp Val	2205	Gly Leu Ser Gln
2210	Ile Arg Ser Leu Leu Pro	2215	Val Gln Met Ser Gln	2220	Glu Glu Glu Glu

2225	2230	2235
Leu Met Arg Glu Arg Leu	Trp Lys Leu Val Asn	Asn His Thr Phe
2240	2245	2250
Phe Gln His Pro Asp Leu	Ile Arg Val Leu Arg	Met His Glu Asn
2255	2260	2265
Val Met Ala Val Met Met	Asn Thr Leu Gly Arg	Arg Ala Gln Ala
2270	2275	2280
Gln Ser Gln Pro Gly Gly	Thr Thr Val Thr Gly	Gln Asp Gly Glu
2285	2290	2295
Ile Val Pro Lys Glu Lys	Asp Thr Ser His Glu	Met Val Val Ala
2300	2305	2310
Cys Cys Arg Phe Leu Cys	Tyr Phe Cys Arg Thr	Ser Arg Gln Asn
2315	2320	2325
Gln Lys Ala Met Phe Asp	His Phe Ser Phe Leu	Leu Glu Asn Ser
2330	2335	2340
Asn Ile Leu Leu Ser Arg	Pro Ser Leu Arg Gly	Ser Thr Pro Leu
2345	2350	2355
Asp Val Ala Tyr Ser Ser	Leu Met Glu Asn Thr	Glu Leu Ala Leu
2360	2365	2370
Ala Leu Arg Glu His Tyr	Leu Glu Lys Ile Ala	Ile Tyr Leu Ser
2375	2380	2385
Arg Cys Gly Leu Gln Ser	Asn Ser Glu Leu Ile	Glu Lys Gly Tyr
2390	2395	2400
Pro Asp Leu Gly Trp Asp	Pro Val Glu Gly Glu	Arg Tyr Leu Asp
2405	2410	2415
Phe Leu Arg Phe Cys Val	Trp Val Asn Gly Glu	Ser Val Glu Glu
2420	2425	2430
Asn Ala Asn Leu Val Ile	Arg Leu Leu Ile Arg	Arg Pro Glu Cys
2435	2440	2445
Leu Gly Pro Ala Leu Arg	Gly Glu Gly Glu Gly	Leu Leu Arg Ala
2450	2455	2460
Ile Ile Asp Ala Asn Lys	Met Ser Glu Arg Ile	Ala Glu Arg Arg
2465	2470	2475
Lys Phe Leu Glu Glu Ser	Gly Asn Gln Glu Asn	Ile Gln Leu Asp
2480	2485	2490
His Pro Leu Pro Glu Ser	Glu Asp Asp Glu Asp	Tyr Ile Asp Thr
2495	2500	2505
Gly Ala Ala Ile Leu Asn	Phe Tyr Cys Thr Leu	Val Asp Leu Leu
2510	2515	2520
Gly Arg Cys Ala Pro Asp	Ser Ser Val Ile Ala	Leu Gly Lys Asn
2525	2530	2535
Glu Ser Leu Arg Ala Arg	Ala Ile Leu Arg Ser	Leu Val Pro Leu
2540	2545	2550
Glu Asp Leu His Gly Val	Leu Ser Leu Arg Phe	Thr Leu Gln Asn
2555	2560	2565
Pro Ala Ala Gly Gln Asp	Arg Pro Lys Ser Asp	Met Pro Ser Gly
2570	2575	2580
Leu Ile Pro Gly His Lys	Gln Ser Val Val Leu	Phe Leu Glu Arg
2585	2590	2595
Val Tyr Gly Ile Glu Met	Gln Glu Leu Phe Phe	Thr Leu Leu Glu
2600	2605	2610
Glu Ala Phe Leu Pro Asp	Leu Arg Thr Ala Thr	Met Leu Asp Arg
2615	2620	2625
Asn Asp Gly Leu Glu Ser	Asp Met Ala Leu Ala	Met Asn Arg Tyr
2630	2635	2640
Ile Gly Asn Ser Val Leu	Pro Leu Leu Ile Gly	His Ser Lys Phe
2645	2650	2655
Tyr Ser Glu Ser Asp Asn	Tyr Ala Asn Leu Leu	Asp Ala Thr Leu
2660	2665	2670
His Thr Val Tyr Arg Leu	Ser Lys Asn Arg Met	Leu Thr Lys Gly



2675	Gln Arg Glu Ala Val Ser Asp	2680	Phe Leu Val Ala Leu	2685	Thr Ser Gln
2690	Met Gln Pro Ser Met Leu Leu	2695	Lys Leu Leu Arg Lys	2700	Leu Thr Val
2705	Asp Val Ser Asn Leu Ser Glu	2710	Tyr Thr Thr Val Ala	2715	Leu Arg Leu
2720	Leu Thr Leu His Tyr Asp Arg	2725	Cys Ala Lys Tyr Tyr	2730	Gly Ser Thr
2735	Gly Gly Gln Gly Ile Tyr Gly	2740	Ala Ser Ser Asp Glu	2745	Glu Lys Arg
2750	Leu Thr Met Met Leu Phe Ser	2755	Asn Ile Phe Asp Ser	2760	Leu Ser Lys
2765	Met Asp Tyr Asp Pro Glu Leu	2770	Phe Gly Lys Ala Leu	2775	Pro Cys Leu
2780	Ser Ala Ile Gly Cys Ala Leu	2785	Pro Pro Asp Tyr Ser	2790	Leu Ser Lys
2795	Asn Tyr Asp Asp Glu Trp Tyr	2800	Gly Ser Lys Gln Asn	2805	Ile Gln Gly
2810	Pro Ser Asp Gly Pro Tyr Asn	2815	Pro Gln Pro Ile Asn	2820	Thr Asn Ser
2825	Ile Val Leu Asp Asn Asp Leu	2830	Asn Ser Ile Val His	2835	Lys Phe Ser
2840	Glu His Tyr His Asp Ala Trp	2845	Ala Asn Arg Lys Leu	2850	Glu Asn Gly
2855	Trp Val Tyr Gly Glu Gln Phe	2860	Asn Asp Val Asn Lys	2865	Ser His Pro
2870	Arg Leu Lys Pro Tyr Met Met	2875	Leu Ser Glu Tyr Glu	2880	Lys Glu Leu
2885	Tyr Lys Glu Pro Val Arg Glu	2890	Ser Leu Lys Ala Leu	2895	Leu Ala Ile
2900	Gly Trp Ser Ile Glu His Ser	2905	Glu Asn Asp Ala Pro	2910	Leu Asn Asn
2915	Arg Gly Ser Val Arg Arg Gln	2920	Ser Lys Ser Asn Glu	2925	Asn Val Thr
2930	Pro Phe Asp Tyr His Pro Asn	2935	Pro Ile Asp Met Thr	2940	Asn Leu Thr
2945	Leu Thr Arg Glu Met Gln Asn	2950	Met Ala Glu Arg Leu	2955	Ala Glu Asn
2960	Ser His Asp Ile Trp Ala Lys	2965	Lys Lys Lys Glu Glu	2970	Val Met Leu
2975	Cys Gly Gly Gly Ile His Asn	2980	Gln Leu Val Pro Tyr	2985	Asp Leu Leu
2990	Thr Asp Lys Glu Lys Lys Lys	2995	Asp Arg Glu Arg Ser	3000	Gln Glu Phe
3005	Leu Lys Tyr Leu Gln Tyr Gln	3010	Gly Tyr Lys Leu His	3015	Arg Pro Asn
3020	Arg Asn Gly Gly Pro Ser Asp	3025	Ala Glu Gln Leu Ala	3030	Ala Ala Ser
3035	Thr Gly Glu Leu Arg Phe Ser	3040	Tyr Ser Leu Leu Glu	3045	Lys Leu Ile
3050	His Tyr Ile Asp Arg Ala Ser	3055	Ile Asn Met Thr Leu	3060	Leu Lys Pro
3065	Ser Gly Thr Phe Ser Arg Arg	3070	Ser Ser Phe Lys Ile	3075	Cys Thr Arg
3080	Asp Ile Lys Phe Phe Ser Lys	3085	Val Val Leu Pro Leu	3090	Val Glu Lys
3095	Tyr Phe Ser Thr His Arg Asn	3100	Tyr Phe Ile Thr Val	3105	Ala Thr Ala
3110	Ser Ser Val Leu Gly Ala Ala	3115	Ser Leu Lys Glu Lys	3120	Glu Met Val

3125	Ala Ser Leu Phe Cys Lys	3130	Leu Ala Asn Leu Leu	3135	Arg Ser Lys Leu
3140	Met Ala Phe Gly Ala Asp	3145	Val Arg Ile Thr Val	3150	Arg Cys Leu Gln
3155	Val Leu Val Lys Ala Ile	3160	Asp Ala Lys Ser Leu	3165	Val Lys Asn Cys
3170	Pro Glu Phe Ile Arg Thr	3175	Ser Met Leu Thr Phe	3180	Phe His Asn Ile
3185	Ala Asp Asp Leu Glu His	3190	Thr Ile Gln Asn Leu	3195	His Asp Ser Arg
3200	Tyr Cys Tyr Leu Arg Gly	3205	Thr His Leu Lys Thr	3210	Ser Thr Ser Leu
3215	Phe Tyr Val Asn Asp Val	3220	Ile Leu Pro Val Leu	3225	Ser Ser Leu Phe
3230	Asp His Leu Ala Ala Tyr	3235	Glu Tyr Gly Asn Glu	3240	Leu Leu Leu Asn
3245	Glu Ile Gln Val Ala Ala	3250	Tyr Lys Met Leu Ser	3255	Ser Leu Tyr Thr
3260	Leu Gly Thr Asp Thr Ser	3265	Leu Thr His Asp Arg	3270	Lys Tyr Leu Lys
3275	Val Gln Leu Glu Arg His	3280	Arg Pro Ala Phe Gly	3285	Ser Cys Leu Gly
3290	Ala Phe Ser Ser Thr Phe	3295	Pro Val Ala Phe Leu	3300	Glu Pro His Leu
3305	Asn Lys His Asn Gln Tyr	3310	Ser Leu Leu Asn Arg	3315	Phe Ala Asp Ser
3320	Ser Leu Glu Ala Gln Asp	3325	Ile Met Ser Arg Met	3330	Glu Gly Thr Met
3335	Pro Thr Leu Glu Thr Val	3340	Leu Asn Glu Val Asp	3345	Gln Phe Val Glu
3350	Ser Glu Lys Thr Tyr Ala	3355	Asp Ala Pro His Ile	3360	Ile Asp Val Ile
3365	Leu Pro Leu Leu Cys Ser	3370	Tyr Leu Pro Tyr Trp	3375	Trp Ala Gln Gly
3380	Pro Asp Asn Val Ala Leu	3385	Thr Thr Gly Asn His	3390	Val Thr Met Val
3395	Thr Ser Glu His Met Asn	3400	Cys Leu Leu Lys Asn	3405	Val Leu Lys Leu
3410	Ile Lys Lys Asn Ile Gly	3415	Asn Asp Asn Ala Pro	3420	Trp Met Thr Gln
3425	Ile Ala Ala Tyr Thr Gln	3430	Gln Ile Ile Ile Asn	3435	Ser Ser Glu Glu
3440	Leu Leu Lys Asp Pro Phe	3445	Leu Pro Leu Ala Glu	3450	Arg Val Lys Lys
3455	Arg Thr Glu Thr Leu Tyr	3460	His Lys Glu Glu Ser	3465	Leu Arg Gly Phe
3470	Ile Lys Ser Ser Thr Asp	3475	Asp Thr Ser Gln Ile	3480	Glu Ala Gln Ile
3485	Gln Glu Asp Trp Gln Leu	3490	Val Val Arg Asp Ile	3495	Tyr Ala Phe Tyr
3500	Pro Leu Leu Ile Lys Tyr	3505	Val Asp Pro Gln Arg	3510	Asn His Trp Leu
3515	Arg Asn Asn Ile Ser Asn	3520	Ala Glu Asp Leu Tyr	3525	Asn His Val Ser
3530	Glu Ile Phe Asn Ile Trp	3535	Ser Lys Ser Gln Tyr	3540	Phe Leu Arg Glu
3545	Glu Gln Asn Phe Ile Ser	3550	Ala Asn Glu Ile Asp	3555	Asn Met Ile Leu
3560	Ile Met Pro Thr Ala Thr	3565	Arg Arg Ser Ala Val	3570	Ile Ser Glu Thr

3575	Ser Leu Gly Gly Ser Ser	3580	Gly Lys Lys Lys Lys	3585	Lys His Arg Asp
3590	Lys Lys Arg Asp Lys Glu	3595	Lys Glu Ile Gln Ala	3600	Ser Leu Met Val
3605	Ala Cys Leu Lys Arg Leu	3610	Leu Pro Val Gly Leu	3615	Asn Leu Phe Ala
3620	Gly Arg Glu Gln Glu Leu	3625	Val Gln His Cys Lys	3630	Asp Arg Phe Leu
3635	Lys Lys Met Pro Asp Tyr	3640	Asp Val Ile Gln Phe	3645	Val Lys Ile Gln
3650	Leu Thr Leu Pro Asp Lys	3655	Leu Asp Pro Ala Asp	3660	Glu Met Ser Trp
3665	Gln His Tyr Leu Tyr Ser	3670	Lys Leu Gly Ser Lys	3675	Lys Gly Asn Thr
3680	Glu Ile Lys Pro Gln Gln	3685	Val Asp Glu Val Ala	3690	Asp Arg Ile Val
3695	Ala Met Ala Lys Val Leu	3700	Tyr Gly Leu His Met	3705	Ile Asp His Pro
3710	Gln Leu Gln Ser Lys Ala	3715	Thr Tyr Arg Ser Val	3720	Val Ser Thr Gln
3725	Arg Lys Arg Ala Val Ile	3730	Ala Cys Phe Arg Gln	3735	Leu Ser Leu His
3740	Ala Leu Thr Arg His Arg	3745	Ala Val Asn Ile Phe	3750	Val Arg Ser Phe
3755	Tyr Glu Leu Trp Leu Gln	3760	Asp Glu Asn Ile Gly	3765	Gln Glu Val Met
3770	Ile Glu Asp Leu Thr Gln	3775	Ser Phe Glu Glu Ala	3780	Glu Leu Lys Lys
3785	Arg Asp Lys Glu Glu Glu	3790	Glu Gly Met Ala Asp	3795	Pro Leu Asn Gln
3800	Met Val Thr Thr Phe Cys	3805	Arg Gly Ala Met Thr	3810	Glu Arg Ser Gly
3815	Ala Leu Gln Glu Asp Pro	3820	Leu Tyr Met Ser Tyr	3825	Ala Asp Ile Leu
3830	Ala Lys Ser Cys Gly Glu	3835	Glu Glu Glu Gly Asn	3840	Asn Asn Glu Glu
3845	Glu Gly Ser Asn Gly Asn	3850	Gly Asp Glu Glu Gly	3855	Gly Ala Ser Ile
3860	His Glu Gln Glu Met Glu	3865	Lys Gln Lys Leu Leu	3870	Phe His Gln Ala
3875	Arg Leu Ala Asn Arg Gly	3880	Val Ala Glu Met Val	3885	Leu Leu His Ile
3890	Ser Ala Cys Lys Gly Ile	3895	Pro Ser Glu Met Val	3900	Met Lys Thr Leu
3905	Gln Leu Gly Ile Ala Val	3910	Leu Arg Gly Gly Asn	3915	Leu Asp Ile Gln
3920	Met Gly Met Leu Asn His	3925	Leu Lys Glu Lys Lys	3930	Asp Val Gly Phe
3935	Phe Thr Ser Val Ala Gly	3940	Leu Met Asn Ser Cys	3945	Ser Val Leu Asp
3950	Leu Asp Ala Phe Glu Arg	3955	Asn Thr Lys Ala Glu	3960	Gly Leu Gly Val
3965	Gly Ser Glu Gly Ala Ala	3970	Gly Glu Lys Asn Met	3975	His Asp Ala Glu
3980	Phe Thr Cys Thr Leu Phe	3985	Arg Phe Ile Gln Leu	3990	Thr Cys Glu Gly
3995	His Asn Leu Glu Trp Gln	4000	Asn Cys Leu Arg Thr	4005	Gln Ala Gly Asn
4010	Thr Thr Thr Val Asn Val	4015	Ala Ile Cys Thr Val	4020	Asp Tyr Leu Leu

4025	4030	4035
Arg Leu Gln Glu Ser Ile Met	Asp Phe Tyr Trp	His Tyr Ser Ser
4040	4045	4050
Lys Glu Leu Ile Asp Pro Ala	Gly Lys Ala Asn	Phe Phe Lys Ala
4055	4060	4065
Ile Gly Val Ala Ser Gln Val	Phe Asn Thr Leu	Ser Glu Val Ile
4070	4075	4080
Gln Gly Pro Cys Thr Gln Asn	Gln Gln Ala Leu	Ala His Ser Arg
4085	4090	4095
Leu Trp Asp Ala Val Gly Gly	Phe Leu Phe Leu	Phe Ser His Met
4100	4105	4110
Gln Asp Lys Leu Ser Lys His	Ser Ser Gln Val	Asp Leu Leu Lys
4115	4120	4125
Glu Leu Leu Asn Leu Gln Lys	Asp Met Ile Thr	Met Met Leu Ser
4130	4135	4140
Met Leu Glu Gly Asn Val Val	Asn Gly Thr Ile	Gly Lys Gln Met
4145	4150	4155
Val Asp Thr Leu Val Glu Ser	Ala Ser Asn Val	Glu Leu Ile Leu
4160	4165	4170
Lys Tyr Phe Asp Met Phe Leu	Lys Leu Lys Asp	Leu Thr Ser Ser
4175	4180	4185
Thr Ser Phe Thr Glu Ile Asp	Pro Asn Asn Asp	Gly Trp Val His
4190	4195	4200
Pro Lys Asp Phe Lys Glu Lys	Met Glu Gln Gln	Lys Ser Tyr Thr
4205	4210	4215
Ala Glu Glu Ile Glu Phe Met	Leu Gln Cys Cys	Glu Ser Asn His
4220	4225	4230
Asp Gly Lys Ile Asp Tyr Ile	Gly Phe Thr Asp	Gln Phe His Glu
4235	4240	4245
Pro Ser Lys Glu Ile Gly Phe	Asn Leu Ala Val	Leu Leu Thr Asn
4250	4255	4260
Leu Ser Glu His Met Pro Asn	Glu Pro Arg Leu	Thr Arg Phe Leu
4265	4270	4275
Glu Thr Ala Ser Ser Val Leu	Asn Tyr Phe Gln	Pro Phe Leu Gly
4280	4285	4290
Arg Ile Glu Ile Leu Gly Gly	Ser Lys Arg Ile	Glu Arg Val Tyr
4295	4300	4305
Phe Glu Ile Lys Glu Ser Asn	Ile Glu Gln Trp	Leu Lys Pro Gln
4310	4315	4320
Ile Arg Glu Ser Lys Arg Ala	Phe Phe Tyr Ser	Ile Val Thr Glu
4325	4330	4335
Gly Gly Asp Lys Glu Lys Leu	Glu Ala Phe Val	Asn Phe Cys Glu
4340	4345	4350
Asp Ala Ile Phe Glu Met Gln	His Ala Ser Gly	Leu Met Ala Val
4355	4360	4365
Asp Asp Gly Ser Gly Ile Gly	Gly Gly Lys Ser	Arg Lys Thr Ala
4370	4375	4380
Tyr Ile Tyr Leu Ala Asp Asp	Glu Glu Asn Lys	Thr Ala Lys Asp
4385	4390	4395
Pro Ile Arg Arg Gly Ile Gln	Ala Ile Lys Tyr	Gly Phe Gln Leu
4400	4405	4410
Leu Phe Phe Val Leu Ser Pro	Thr Asn Ile Lys	Asn Lys Ile Asn
4415	4420	4425
Glu Ile Gln Gln Met Ser Phe	Val Glu Leu Ile	Thr Ser Phe Phe
4430	4435	4440
Lys Leu Trp Phe Tyr Leu Ile	Phe Tyr Thr Gly	Tyr Ser Gly Val
4445	4450	4455
Tyr Val Leu Arg Tyr Ile Ser	Arg Ile Leu Met	Gln Leu Met Ser
4460	4465	4470
Gly Thr Gln Ser Glu Glu Thr	Thr Val Glu Val	Val Glu Lys Arg

4475	Ala Gly Ser Phe Arg Met	4480	Leu Pro Ala Leu Pro	4485	Ser Ser Gly Val
4490	Asp Glu Pro Pro Ser Thr	4495	Leu Ile Asp Ser Ser	4500	Asn Met Arg Lys
4505	Asn Ser Gly Ala Pro Asp	4510	Ser Lys His Val Lys	4515	Ser Thr Thr Val
4520	Gly Asp Asp Lys Asp Glu	4525	Thr Ser Thr Glu Asn	4530	His Glu Lys Glu
4535	Asp Gly Val Lys Ser Glu	4540	Asp Asn Ser Glu Leu	4545	Gln Ala Ser Phe
4550	Val Asp Leu Leu Val Gly	4555	Glu Ser Ala Arg Lys	4560	Asp Ser Ile Ala
4565	Gly Pro Glu Val Leu Ala	4570	Gln Gln Gln Ala Val	4575	Met Ala Ala Val
4580	Glu Ala Glu Ile Lys Gln	4585	Lys Asn Ser Val Glu	4590	Asn Pro Ser Ala
4595	Phe Ser Thr Ile Asp Ile	4600	Asn Ala Tyr Thr His	4605	Arg Ala Leu Ser
4610	Phe Leu Ala Arg Asn Phe	4615	Tyr Asn Leu Lys Tyr	4620	Val Ala Leu Val
4625	Leu Ala Phe Cys Ile Asn	4630	Phe Ile Leu Leu Phe	4635	Tyr Lys Val Thr
4640	Thr Leu Ala Glu Asp Leu	4645	Ser Asp Asp Gly Asp	4650	Ser Lys Asp Phe
4655	Ala Leu Gly Ser Ala Gly	4660	Ile Ser Asn Asp Asp	4665	Ile Asp Asp Ser
4670	Asn Ser Thr Glu Ile Ala	4675	Asp Asp Asp Gly Ala	4680	Leu Glu Leu Val
4685	His Val Asn Glu Asp Phe	4690	Phe Tyr Met Ala His	4695	Val Met Arg Leu
4700	Ala Ala Leu Leu His Ser	4705	Leu Ala Ser Leu Ala	4710	Met Leu Ile Ala
4715	Tyr Tyr His Leu Lys Val	4720	Pro Leu Ala Ile Phe	4725	Lys Arg Glu Lys
4730	Glu Ile Ala Arg Arg Leu	4735	Glu Phe Asp Gly Leu	4740	Tyr Ile Val Glu
4745	Gln Pro Glu Asp Asp Asp	4750	Ile Lys Ser His Trp	4755	Asp Lys Leu Val
4760	Ile Ser Ala Lys Ser Phe	4765	Pro Val Asn Tyr Trp	4770	Asp Lys Phe Ala
4775	Lys Lys Lys Val Arg Gln	4780	Lys Tyr Ser Glu Thr	4785	Tyr Asp Phe Asp
4790	Ser Ile Ser Asn Leu Leu	4795	Gly Met Glu Lys Thr	4800	Ser Phe Ser Thr
4805	Gln Glu Asn Glu Glu Arg	4810	Thr Gly Leu Ile Asn	4815	Phe Val Ile Asn
4820	Ile Asp Trp Arg Tyr Gln	4825	Val Trp Lys Ala Gly	4830	Val Thr Ile Thr
4835	Asp Asn Ala Phe Leu Tyr	4840	Ser Leu Trp Tyr Phe	4845	Thr Phe Ser Ile
4850	Leu Gly Asn Phe Asn Asn	4855	Phe Phe Phe Ala Ala	4860	His Leu Leu Asp
4865	Val Ala Val Gly Phe Lys	4870	Thr Leu Arg Thr Ile	4875	Leu Gln Ser Val
4880	Thr His Asn Gly Lys Gln	4885	Leu Val Leu Thr Val	4890	Leu Leu Leu Thr
4895	Ile Ile Val Tyr Ile Tyr	4900	Thr Val Ile Ala Phe	4905	Asn Phe Phe Arg
4910	Lys Phe Tyr Ile Arg Glu	4915	Glu Asp Asp Glu Val	4920	Asp Lys Lys Cys

4925	4930	4935
His Asp Met Leu Thr Cys	Phe Val Phe His Leu	Tyr Lys Gly Val
4940	4945	4950
Arg Ala Gly Gly Gly Ile	Gly Asp Glu Ile Gly	Ser Pro Asp Gly
4955	4960	4965
Asp Asp Tyr Glu Val Tyr	Arg Ile Met Phe Asp	Ile Thr Phe Phe
4970	4975	4980
Phe Phe Val Ile Ile Ile	Leu Leu Ala Ile Ile	Gln Gly Leu Ile
4985	4990	4995
Ile Asp Ala Phe Gly Glu	Leu Arg Asp Gln Leu	Glu Ser Val Lys
5000	5005	5010
Glu Asp Met Glu Ser Asn	Cys Phe Ile Cys Gly	Ile Gly Lys Asp
5015	5020	5025
Tyr Phe Asp Lys Val Pro	His Gly Phe Asp Thr	His Val Gln Glu
5030	5035	5040
Glu His Asn Leu Ala Asn	Tyr Met Phe Phe Leu	Met His Leu Ile
5045	5050	5055
Asn Lys Pro Asp Thr Glu	Tyr Thr Gly Gln Glu	Thr Tyr Val Trp
5060	5065	5070
Asn Met Tyr Gln Gln Arg	Cys Trp Asp Phe Phe	Pro Val Gly Asp
5075	5080	5085
Cys Phe Arg Lys Gln Tyr	Glu Glu Glu Leu Gly	Gly Gly Gly Gly
5090	5095	5100
Val		

<210> 7  
 <211> 15413  
 <212> DNA  
 <213> *Peregrinus maidis*

<220>  
 <221> misc feature  
 <222> (1264)  
 <223> n = a,c,g, or t

<220>  
 <221> CDS  
 <222> (17)..(15397)  
 <223>

<400> 7  
 ggatccttaa ttaaca atg gcg gat agt gag ggt gga tct gag cag gat gat 52  
 Met Ala Asp Ser Glu Gly Gly Ser Glu Gln Asp Asp  
 1 5 10  
 gtt tcg ttc ctt aga acg gaa gac atg gtt tgt ctg tca tgt aca gcc 100  
 Val Ser Phe Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala  
 15 20 25  
 acc ggt gaa aga gtt tgc ctc gct gca gaa gga ttt ggt aac cgt cat 148  
 Thr Gly Glu Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His  
 30 35 40  
 tgt ttc ctg gaa aac atc gct gac aag aat att cca cca gat ttg tcc 196  
 Cys Phe Leu Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser  
 45 50 55 60  
 aca tgt gta ttt gtt att gag caa gct tta tcg gtt cga gct ctt cag 244  
 Thr Cys Val Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln  
 65 70 75  
 gaa ttg gtt act gct gct gga tca gaa gag ggt aaa gga act gga tca 292  
 Glu Leu Val Thr Ala Ala Gly Ser Glu Glu Gly Lys Gly Thr Gly Ser  
 80 85 90

gga cat agg acc cta ttg tac ggc aat gct att cta ctt cgg cat caa	340
Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln	
95 100 105	
aac agt gat atg tac ttg gcc tgc tcg tca acc agc tca tcc aat gat	388
Asn Ser Asp Met Tyr Leu Ala Cys Ser Ser Thr Ser Ser Ser Asn Asp	
110 115 120	
aaa ctg tca ttc gat gtt ggt ctc caa gaa cat tca caa ggt gag gcc	436
Lys Leu Ser Phe Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala	
125 130 135 140	
tgt tgg tgg act gtg cat cct gct tcc aag caa aga tcg gag ggt gag	484
Cys Trp Trp Thr Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu	
145 150 155	
aag gtg cga gtt ggt gac gac ttg atc tta gtt tca gtt gca act gaa	532
Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu	
160 165 170	
cga tac ttg cat aca aca aaa gag aac gat ttg tcc atc gtg aat gct	580
Arg Tyr Leu His Thr Thr Lys Glu Asn Asp Leu Ser Ile Val Asn Ala	
175 180 185	
tcc ttt cat gta act cat tgg tcc gtt cag cct tat ggc aca gga ata	628
Ser Phe His Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile	
190 195 200	
agt cgc atg aaa tat gtt ggt tat gtg ttt ggt ggc gat gtg ctt cgg	676
Ser Arg Met Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg	
205 210 215 220	
ttc ttt cat ggt ggt gat gag tgc ctt aca att cca tca acg tgg agt	724
Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Ser	
225 230 235	
gaa gca cct gga cag aat att gtg gtt tat gag gga ggc agt gtc atg	772
Glu Ala Pro Gly Gln Asn Ile Val Val Tyr Glu Gly Gly Ser Val Met	
240 245 250	
agt caa gct cgt tca tta tgg aga cta gaa ctt gct aga aca aaa tgg	820
Ser Gln Ala Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp	
255 260 265	
gca ggt ggt ttc ata aat tgg tac cac cca atg aga ata cga cac ttg	868
Ala Gly Gly Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Leu	
270 275 280	
aca act ggt cga tac ctt ggt gtc aac gag aac aat gaa cta cat ctg	916
Thr Thr Gly Arg Tyr Leu Gly Val Asn Glu Asn Asn Glu Leu His Leu	
285 290 295 300	
att gtg aga gat gag gca acg acg gcg ttg tca gca ttc tgt ctg cga	964
Ile Val Arg Asp Glu Ala Thr Thr Ala Leu Ser Ala Phe Cys Leu Arg	
305 310 315	
caa gag aaa gat gat cag aaa gtg gtg ctt gaa gac aaa gac cta gaa	1012
Gln Glu Lys Asp Asp Gln Lys Val Val Leu Glu Asp Lys Asp Leu Glu	
320 325 330	
gta ata ggt gca cca att atc aag tat ggt gac agt act gtt ctg gtt	1060
Val Ile Gly Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val Leu Val	
335 340 345	
cag cat tct gag act ggc ttg tgg ctt aca tac aaa tca tat gaa act	1108
Gln His Ser Glu Thr Gly Leu Trp Leu Thr Tyr Lys Ser Tyr Glu Thr	
350 355 360	
aaa aag aaa gga gtt gga aaa gtt gaa gag aaa gct gtg ctc cat	1156
Lys Lys Lys Gly Val Gly Lys Val Glu Glu Lys Gln Ala Val Leu His	
365 370 375 380	
gag gaa gga aag atg gac gac ggc ttg gat ttc tcc cgc agt caa gaa	1204
Glu Glu Gly Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu	
385 390 395	
gaa gaa tcg cgt acc gct cgt gta att agg aag tgt tca tcc ttg ttc	1252
Glu Glu Ser Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe	
400 405 410	

act cag ttt atn aga ggt cta gag acc ttg cag gtg aat aga agg cac	1300
Thr Gln Phe Xaa Arg Gly Leu Glu Thr Leu Gln Val Asn Arg Arg His	
415 420 425	
tcg tta ttt tgt gca act gtg aat ttg aat gaa atg gta atg tgc ctc	1348
Ser Leu Phe Cys Ala Thr Val Asn Leu Asn Glu Met Val Met Cys Leu	
430 435 440	
gaa gat ttg att aac tat ttt gcg cag cca gca gat gat atg gaa cac	1396
Glu Asp Leu Ile Asn Tyr Phe Ala Gln Pro Ala Asp Asp Met Glu His	
445 450 455 460	
gaa gaa aaa caa aat agg ttc cgt gca ttg aga aat cgt caa gat ctg	1444
Glu Glu Lys Gln Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu	
465 470 475	
ttt caa gaa gaa ggc ata tta aat tta att ctg gaa gcc atc gat aaa	1492
Phe Gln Glu Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys	
480 485 490	
ata aat gtg ata acg tct caa gga ttc ctt gta agt tta gca gga gat	1540
Ile Asn Val Ile Thr Ser Gln Gly Phe Leu Val Ser Leu Ala Gly Asp	
495 500 505	
gaa tca gga caa agc tgg gat ata att tct ggt tac ctg tat caa ctt	1588
Glu Ser Gly Gln Ser Trp Asp Ile Ile Ser Gly Tyr Leu Tyr Gln Leu	
510 515 520	
ctt gct gct ata att aaa gga aat cat aca aat tgc gct cag ttt gcg	1636
Leu Ala Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala	
525 530 535 540	
aat tca aat cgt ctg aat tgg ctg ttc agc aga ctg ggc tca caa gca	1684
Asn Ser Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala	
545 550 555	
tca agt gaa ggc acg gga atg ctt gat gta ttg cat tgt gtt ctc att	1732
Ser Ser Glu Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile	
560 565 570	
gat tcg cct gaa gcg ttg aat atg atg agg gat gag cat ata aaa gtt	1780
Asp Ser Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val	
575 580 585	
ata ata tct ctt ctt gag aaa cat gga agg gat ccg aaa gtt ttg gat	1828
Ile Ile Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp	
590 595 600	
gtt ctc tgt tca ctg tgt gtg ggt aat ggt gtt gct gtt cgt agc tca	1876
Val Leu Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser	
605 610 615 620	
caa aac aat att tgt gat ttc ctt cta cct gga aaa aat ctt ctt cct	1924
Gln Asn Asn Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Pro	
625 630 635	
caa acg caa cta gtg gat cat gtg gct agt gtc cgt cca aat ata ttt	1972
Gln Thr Gln Leu Val Asp His Val Ala Ser Val Arg Pro Asn Ile Phe	
640 645 650	
gtt ggg cgt gtt gtt ggc tct gca gtt tat caa aaa tgg tat ttt gag	2020
Val Gly Arg Val Val Gly Ser Ala Val Tyr Gln Lys Trp Tyr Phe Glu	
655 660 665	
gtt acc atg gat cac att gag cag aca aca cac atg aca cct cac ttg	2068
Val Thr Met Asp His Ile Glu Gln Thr Thr His Met Thr Pro His Leu	
670 675 680	
aga att ggc tgg gcg aac act agt gga tat gtg cct tat cct gga gga	2116
Arg Ile Gly Trp Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly	
685 690 695 700	
ggt gaa aag tgg ggt gga aat gga gtt ggt gat gat ctt tat tct tat	2164
Gly Glu Lys Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Tyr	
705 710 715	
ggg ttc gat ggc gcg aat tta tgg aca gga gga cgt aaa act tgt gtt	2212
Gly Phe Asp Gly Ala Asn Leu Trp Thr Gly Gly Arg Lys Thr Cys Val	
720 725 730	



cta ccg cat gcg act gag cca ttc atc aag aaa ggc gat gta att gga	2260
Leu Pro His Ala Thr Glu Pro Phe Ile Lys Lys Gly Asp Val Ile Gly	
735 740 745	
gtg tct cta gat tta act gtg cca atc ata aca ttt tca ttc aat ggt	2308
Val Ser Leu Asp Leu Thr Val Pro Ile Ile Thr Phe Ser Phe Asn Gly	
750 755 760	
tcg cct att agg ggc tgc ttc aga gat ttc aac tat gat gga atg ttc	2356
Ser Pro Ile Arg Gly Cys Phe Arg Asp Phe Asn Tyr Asp Gly Met Phe	
765 770 775 780	
ttt cct gtt ata agt tgc tgc cac aag cta agt tgc cga ttt ctt tta	2404
Phe Pro Val Ile Ser Cys Ser His Lys Leu Ser Cys Arg Phe Leu Leu	
785 790 795	
ggg gga gac cat ggt cga ctg aaa tat gtt cca cca gaa gaa ttc tct	2452
Gly Gly Asp His Gly Arg Leu Lys Tyr Val Pro Pro Glu Glu Phe Ser	
800 805 810	
cca ctt gtt gaa agt ctg ctt cct caa caa gtg ttg tcc att gat cca	2500
Pro Leu Val Glu Ser Leu Leu Pro Gln Gln Val Leu Ser Ile Asp Pro	
815 820 825	
tgt ttc tac ttt ggt aat ttg aac aaa tgt gta tta tca ggc cca tgg	2548
Cys Phe Tyr Phe Gly Asn Leu Asn Lys Cys Val Leu Ser Gly Pro Trp	
830 835 840	
aca gtt gag gat gat aca gca ttt gtt cca aca cct gtt gat aca aca	2596
Thr Val Glu Asp Asp Thr Ala Phe Val Pro Thr Pro Val Asp Thr Thr	
845 850 855 860	
aag gtt tcg ctc cca aat tat att gag agc ata aga gat aag ttg gca	2644
Lys Val Ser Leu Pro Asn Tyr Ile Glu Ser Ile Arg Asp Lys Leu Ala	
865 870 875	
gaa aat att cat gaa atg tgg gct atg aac aag ata gaa gct ggc tgg	2692
Glu Asn Ile His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp	
880 885 890	
atg ttt ggg gag aag cga gat gac ata cgt aaa gtg cat cca tgc ctt	2740
Met Phe Gly Glu Lys Arg Asp Asp Ile Arg Lys Val His Pro Cys Leu	
895 900 905	
att cag ttc gac caa ctt cca cca gct gag aag cgc tat gac tca caa	2788
Ile Gln Phe Asp Gln Leu Pro Ala Glu Lys Arg Tyr Asp Ser Gln	
910 915 920	
ctc gca gtt caa act ctc aag aca att ctg gca ctc ggc tac tac ata	2836
Leu Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu Gly Tyr Tyr Ile	
925 930 935 940	
acg atg gat aag cct cct tcg cgt ata aaa aca att cgt ctt cca aat	2884
Thr Met Asp Lys Pro Pro Ser Arg Ile Lys Thr Ile Arg Leu Pro Asn	
945 950 955	
gag cct ttc atg caa tca aat ggc tac aag cca gca cca ctt gat ctc	2932
Glu Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu	
960 965 970	
acg gcc ata tca tta aca ccg aaa atg gag gaa tta gtt gat caa cta	2980
Thr Ala Ile Ser Leu Thr Pro Lys Met Glu Glu Leu Val Asp Gln Leu	
975 980 985	
gcc gag aat aca cat aat cta tgg gcc aaa gaa cga atc caa caa ggg	3028
Ala Glu Asn Thr His Asn Leu Trp Ala Lys Glu Arg Ile Gln Gln Gly	
990 995 1000	
tgg acg tat gga ctc aat gag gac tct gat atg ttg aga agt ccg	3073
Trp Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met Leu Arg Ser Pro	
1005 1010 1015	
cat ctg gtg cct tac tgc aaa gtt gac gaa gct ata aaa aaa gct	3118
His Leu Val Pro Tyr Cys Lys Val Asp Glu Ala Ile Lys Lys Ala	
1020 1025 1030	
aac agg gat act gca agt gaa acg gtc aga act cta ttg gtg tat	3163
Asn Arg Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr	
1035 1040 1045	

ggc	tac	aat	cta	gat	ccc	ccc	acc	ggc	gaa	gca	cat	gaa	gct	ctt	3208
Gly	Tyr	Asn	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Ala	His	Glu	Ala	Leu	
1050					1055					1060					
ctt	gca	gag	gct	agt	cgt	tta	aga	cag	act	cac	ttc	aga	acg	tac	3253
Leu	Ala	Glu	Ala	Ser	Arg	Leu	Arg	Gln	Thr	His	Phe	Arg	Thr	Tyr	
1065					1070					1075					
cga	gca	gaa	aag	aac	tat	gcc	gtg	aca	acg	gga	aag	tgg	tat	ttt	3298
Arg	Ala	Glu	Lys	Asn	Tyr	Ala	Val	Thr	Thr	Gly	Lys	Trp	Tyr	Phe	
1080					1085					1090					
gaa	ttt	gaa	atc	ctt	act	gct	gga	cca	atg	aga	gta	ggg	tgg	gca	3343
Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	
1095					1100					1105					
cgg	tca	gat	tgt	ccg	cca	gga	tca	caa	ttg	gga	aat	gac	gaa	tat	3388
Arg	Ser	Asp	Cys	Pro	Pro	Gly	Ser	Gln	Leu	Gly	Asn	Asp	Glu	Tyr	
1110					1115					1120					
tcg	tgg	gca	ttt	gat	ggc	ttc	aac	gag	gaa	aaa	gtg	tac	ttg	gga	3433
Ser	Trp	Ala	Phe	Asp	Gly	Phe	Asn	Glu	Glu	Lys	Val	Tyr	Leu	Gly	
1125					1130					1135					
aca	ggc	gag	tcg	ttt	ggg	cgc	cag	tgg	cag	gtt	gga	gat	gtg	gtt	3478
Thr	Gly	Glu	Ser	Phe	Gly	Arg	Gln	Trp	Gln	Val	Gly	Asp	Val	Val	
1140					1145					1150					
gga	gta	ttt	ctt	gat	cta	ttg	gac	cat	acc	atg	agt	ttc	tct	ttg	3523
Gly	Val	Phe	Leu	Asp	Leu	Leu	Asp	His	Thr	Met	Ser	Phe	Ser	Leu	
1155					1160					1165					
aat	gga	gaa	ctg	ctt	atg	gat	gcc	ctt	gga	ggg	gag	act	tca	ttc	3568
Asn	Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Ser	Phe	
1170					1175					1180					
gct	gac	gtt	caa	ggg	gaa	agc	ttt	gtt	cct	gct	ttc	acc	ctt	ggc	3613
Ala	Asp	Val	Gln	Gly	Glu	Ser	Phe	Val	Pro	Ala	Phe	Thr	Leu	Gly	
1185					1190					1195					
gta	ggc	cag	aaa	gct	aaa	ctg	act	ttt	ggg	caa	gat	gtt	act	gta	3658
Val	Gly	Gln	Lys	Ala	Lys	Leu	Thr	Phe	Gly	Gln	Asp	Val	Thr	Val	
1200					1205					1210					
tta	aag	ttt	ttt	aca	act	tgc	ggg	ctt	caa	gaa	gga	tat	gaa	cca	3703
Leu	Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	
1215					1220					1225					
tty	tgt	gtc	aat	atg	aac	aga	gcg	gta	acg	tat	tgg	tac	acc	aag	3748
Phe	Cys	Val	Asn	Met	Asn	Arg	Ala	Val	Thr	Tyr	Trp	Tyr	Thr	Lys	
1230					1235					1240					
gac	cac	cca	att	ttt	gag	aat	act	gaa	gat	tat	gcc	gac	tca	cga	3793
Asp	His	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Asp	Tyr	Ala	Asp	Ser	Arg	
1245					1250					1255					
att	gat	gtt	aca	aga	att	cca	gct	ggg	tcg	gat	act	cca	cct	tgc	3838
Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	
1260					1265					1270					
ctc	aaa	ata	agt	cac	aac	cta	ttc	gag	tca	atg	gaa	aaa	gcc	aat	3883
Leu	Lys	Ile	Ser	His	Asn	Leu	Phe	Glu	Ser	Met	Glu	Lys	Ala	Asn	
1275					1280					1285					
tgg	gaa	ttc	ctc	aga	ctc	tca	ctc	cca	gtt	att	tgc	cac	tca	tca	3928
Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Ser	Ser	
1290					1295					1300					
ttt	atc	gaa	gag	agt	gaa	aaa	ttg	aaa	cgt	tgg	cag	gag	ata	aga	3973
Phe	Ile	Glu	Glu	Ser	Glu	Lys	Leu	Lys	Arg	Trp	Gln	Glu	Ile	Arg	
1305					1310					1315					
atc	cgt	cag	cat	aga	ctg	tta	gtc	gag	gct	gac	caa	aca	aca	cca	4018
Ile	Arg	Gln	His	Arg	Leu	Leu	Val	Glu	Ala	Asp	Gln	Thr	Thr	Pro	
1320					1325					1330					
gcc	cat	atg	gaa	caa	atc	atg	aaa	tct	ggc	ctc	tcc	atg	agt	gac	4063
Ala	His	Met	Glu	Gln	Ile	Met	Lys	Ser	Gly	Leu	Ser	Met	Ser	Asp	
1335					1340					1345					

att	aaa	gga	ctc	cat	aga	ggc	tac	tca	gaa	gat	gca	gtg	gag	gca	4108
Ile	Lys	Gly	Leu	His	Arg	Gly	Tyr	Ser	Glu	Asp	Ala	Val	Glu	Ala	
1350					1355					1360					
gat	gaa	atg	atg	atg	caa	agt	aca	cca	aca	aca	aag	agt	aaa	atg	4153
Asp	Glu	Met	Met	Met	Gln	Ser	Thr	Pro	Thr	Thr	Lys	Ser	Lys	Met	
1365					1370					1375					
aga	cag	cca	tca	aga	cct	ccc	agg	aaa	gga	tca	ctt	tcc	aga	aat	4198
Arg	Gln	Pro	Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Ser	Arg	Asn	
1380					1385					1390					
gag	gat	atg	cca	atg	att	aat	gga	tct	tta	gaa	caa	agt	aaa	atg	4243
Glu	Asp	Met	Pro	Met	Ile	Asn	Gly	Ser	Leu	Glu	Gln	Ser	Lys	Met	
1395					1400					1405					
aac	aga	tca	acc	agt	gag	ctg	gat	ctt	aat	agg	tat	aat	gct	gat	4288
Asn	Arg	Ser	Thr	Ser	Glu	Leu	Asp	Leu	Asn	Arg	Tyr	Asn	Ala	Asp	
1410					1415					1420					
ttg	caa	aat	gat	aag	gac	gac	aag	aag	aag	agg	ggt	cga	tct	cct	4333
Leu	Gln	Asn	Asp	Lys	Asp	Asp	Lys	Lys	Lys	Arg	Gly	Arg	Ser	Pro	
1425					1430					1435					
ttc	agg	ttc	ttc	tct	cgc	aaa	cgt	gaa	gct	agc	aat	gaa	aga	tcg	4378
Phe	Arg	Phe	Phe	Ser	Arg	Lys	Arg	Glu	Ala	Ser	Asn	Glu	Arg	Ser	
1440					1445					1450					
aag	aag	gct	aaa	agt	cca	gag	ccc	aac	tct	atg	atg	gaa	gct	gac	4423
Lys	Lys	Ala	Lys	Ser	Pro	Glu	Pro	Asn	Ser	Met	Met	Glu	Ala	Asp	
1455					1460					1465					
aga	ggg	caa	atg	ggt	aga	tct	cag	cat	cat	atg	atg	agg	aca	ccc	4468
Arg	Gly	Gln	Met	Gly	Arg	Ser	Gln	His	His	Met	Met	Arg	Thr	Pro	
1470					1475					1480					
act	gtc	aaa	gta	aca	gct	ccg	gat	atg	aaa	gtc	att	cct	cca	acc	4513
Thr	Val	Lys	Val	Thr	Ala	Pro	Asp	Met	Lys	Val	Ile	Pro	Pro	Thr	
1485					1490					1495					
ata	cct	gaa	cgt	tcc	aac	atg	cct	aag	caa	atg	act	gga	gcg	cct	4558
Ile	Pro	Glu	Arg	Ser	Asn	Met	Pro	Lys	Gln	Met	Thr	Gly	Ala	Pro	
1500					1505					1510					
ctt	tct	ggc	agt	gga	att	gaa	tcg	gtt	ggc	aac	gaa	ata	ttc	gat	4603
Leu	Ser	Gly	Ser	Gly	Ile	Glu	Ser	Val	Gly	Asn	Glu	Ile	Phe	Asp	
1515					1520					1525					
ggc	gaa	tgt	ctc	aag	ttg	atc	aat	gaa	tat	ttc	tac	ggt	gtg	cgt	4648
Gly	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr	Gly	Val	Arg	
1530					1535					1540					
att	ttc	ccc	ggt	cag	gat	cca	act	cat	gtg	tat	gtc	ggt	tgg	gtg	4693
Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val	Gly	Trp	Val	
1545					1550					1555					
aca	acc	cag	tac	cac	ttt	ttc	gcc	aat	gag	ttc	aat	cag	tcg	aaa	4738
Thr	Thr	Gln	Tyr	His	Phe	Phe	Ala	Asn	Glu	Phe	Asn	Gln	Ser	Lys	
1560					1565					1570					
gta	aga	aaa	gtc	aca	gtg	cat	acc	ctt	gat	gaa	ttc	agt	cga	gtc	4783
Val	Arg	Lys	Val	Thr	Val	His	Thr	Leu	Asp	Glu	Phe	Ser	Arg	Val	
1575					1580					1585					
aat	gag	agt	gtc	gat	aga	caa	agc	tgt	tac	atg	gta	cga	tcc	gat	4828
Asn	Glu	Ser	Val	Asp	Arg	Gln	Ser	Cys	Tyr	Met	Val	Arg	Ser	Asp	
1590					1595					1600					
gag	ctt	ttc	aat	gaa	gtt	aca	aac	gac	tct	tct	gga	aaa	ggt	gct	4873
Glu	Leu	Phe	Asn	Glu	Val	Thr	Asn	Asp	Ser	Ser	Gly	Lys	Gly	Ala	
1605					1610					1615					
tcg	cag	gga	atg	ttc	att	ggc	tgc	ttt	gtg	gat	gcc	gca	acc	ggt	4918
Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Phe	Val	Asp	Ala	Ala	Thr	Gly	
1620					1625					1630					
tac	ata	tct	ttc	act	tgt	gaa	ggg	aag	gag	aca	agt	cac	aag	ttc	4963
Tyr	Ile	Ser	Phe	Thr	Cys	Glu	Gly	Lys	Glu	Thr	Ser	His	Lys	Phe	
1635					1640					1645					

aag	atg	gaa	cca	gaa	aca	aag	tta	ttc	cca	gct	ata	ttt	gtg	gaa	5008
Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe	Pro	Ala	Ile	Phe	Val	Glu	
1650					1655					1660					
gca	acg	agt	aaa	gaa	atc	ctg	caa	att	gaa	ctg	gga	cga	act	tca	5053
Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	Arg	Thr	Ser	
1665					1670					1675					
aca	acc	tta	ccc	ctt	tca	gct	gca	gtt	ttg	cag	aat	tct	gaa	cgt	5098
Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Gln	Asn	Ser	Glu	Arg	
1680					1685					1690					
cac	gtc	aat	cca	cag	ttt	cca	cct	cgc	ttg	aaa	gtg	caa	tgt	ttg	5143
His	Val	Asn	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	
1695					1700					1705					
aaa	ccg	cac	caa	tgg	gct	aga	gtt	cca	aat	gta	tct	ctt	caa	gtt	5188
Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Val	Ser	Leu	Gln	Val	
1710					1715					1720					
cat	gct	ttg	aag	ttg	tct	gat	att	cgt	ggg	ttg	agt	atg	ttg	tgt	5233
His	Ala	Leu	Lys	Leu	Ser	Asp	Ile	Arg	Gly	Trp	Ser	Met	Leu	Cys	
1725					1730					1735					
gaa	gat	cca	atg	tca	atg	tta	gct	ctt	cac	atc	cca	gaa	gaa	gat	5278
Glu	Asp	Pro	Met	Ser	Met	Leu	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	
1740					1745					1750					
cgc	agc	att	gat	att	ttg	gaa	tta	att	gag	atg	gaa	aag	ttg	tta	5323
Arg	Ser	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Glu	Lys	Leu	Leu	
1755					1760					1765					
tcg	ttc	cat	gca	cac	act	cta	act	ctc	tat	gca	gct	ctt	tgc	ttt	5368
Ser	Phe	His	Ala	His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	Leu	Cys	Phe	
1770					1775					1780					
cag	tcc	aac	tat	cgg	gct	gct	cac	aca	ctc	tgc	tcg	cat	gtt	gat	5413
Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Thr	Leu	Cys	Ser	His	Val	Asp	
1785					1790					1795					
gag	aaa	caa	ctt	ttg	tac	gca	att	cgc	tca	gac	tac	atg	tca	ggg	5458
Glu	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Asp	Tyr	Met	Ser	Gly	
1800					1805					1810					
cct	ttg	aga	caa	ggc	ttt	tat	gac	ctt	ctt	att	gct	ctt	cat	ctg	5503
Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	
1815					1820					1825					
gaa	tcg	cat	gcc	tac	acg	atg	gaa	gtg	tgc	aaa	aat	gaa	ttt	att	5548
Glu	Ser	His	Ala	Tyr	Thr	Met	Glu	Val	Cys	Lys	Asn	Glu	Phe	Ile	
1830					1835					1840					
ata	cca	ata	ggg	caa	gaa	ctg	aaa	gat	gtc	tat	gaa	gat	cca	gaa	5593
Ile	Pro	Ile	Gly	Gln	Glu	Leu	Lys	Asp	Val	Tyr	Glu	Asp	Pro	Glu	
1845					1850					1855					
atg	tgt	cac	agt	ctt	aga	tca	tta	aaa	acc	gag	tca	gtg	cta	ccc	5638
Met	Cys	His	Ser	Leu	Arg	Ser	Leu	Lys	Thr	Glu	Ser	Val	Leu	Pro	
1860					1865					1870					
aca	atg	aag	atg	aca	gat	aaa	gct	gat	gaa	cct	tct	ccc	agt	gaa	5683
Thr	Met	Lys	Met	Thr	Asp	Lys	Ala	Asp	Glu	Pro	Ser	Pro	Ser	Glu	
1875					1880					1885					
gtc	gtg	gac	aat	atc	agg	agc	ttg	tac	agt	cct	cag	ttt	cct	ttg	5728
Val	Val	Asp	Asn	Ile	Arg	Ser	Leu	Tyr	Ser	Pro	Gln	Phe	Pro	Leu	
1890					1895					1900					
gat	gtg	gtc	aga	gat	ttt	gtt	atg	gct	gca	ctc	gat	gaa	gct	gtt	5773
Asp	Val	Val	Arg	Asp	Phe	Val	Met	Ala	Ala	Leu	Asp	Glu	Ala	Val	
1905					1910					1915					
caa	atc	aac	caa	ctc	cat	aat	aga	gat	ccg	gtg	gga	ggc	tct	aat	5818
Gln	Ile	Asn	Gln	Leu	His	Asn	Arg	Asp	Pro	Val	Gly	Gly	Ser	Asn	
1920					1925					1930					
gaa	aac	tac	ttc	ctg	cca	ctg	ttg	aag	tta	gtt	gac	cgc	ttg	tta	5863
Glu	Asn	Tyr	Phe	Leu	Pro	Leu	Leu	Lys	Leu	Val	Asp	Arg	Leu	Leu	
1935					1940					1945					

cta	gtc	ggg	atg	ctt	cga	gat	gga	gat	gtc	atg	aag	ctg	ctg	ata	5908
Leu	Val	Gly	Met	Leu	Arg	Asp	Gly	Asp	Val	Met	Lys	Leu	Leu	Ile	
1950					1955					1960					
atg	ttc	agt	cca	gaa	act	tgg	gac	acg	gca	ttt	gaa	aaa	gat	ggc	5953
Met	Phe	Ser	Pro	Glu	Thr	Trp	Asp	Thr	Ala	Phe	Glu	Lys	Asp	Gly	
1965					1970					1975					
aaa	gat	gaa	cac	cgg	aag	ggg	ttg	ctg	act	atg	aag	atg	gct	gaa	5998
Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	
1980					1985					1990					
ggg	gct	aaa	ttg	cag	atg	tgc	tac	cta	ttg	cat	cat	ctt	tac	gat	6043
Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	
1995					2000					2005					
atc	caa	ctt	cgt	cac	aga	gtg	gaa	gct	att	atc	tct	ttt	agt	gtc	6088
Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ser	Phe	Ser	Val	
2010					2015					2020					
gat	ttc	gtc	gga	gat	ttg	caa	tca	gat	caa	ctc	aga	aga	tat	atc	6133
Asp	Phe	Val	Gly	Asp	Leu	Gln	Ser	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	
2025					2030					2035					
gag	atc	aaa	caa	tca	gac	tta	cca	tct	gcc	atc	gca	gct	aaa	aag	6178
Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Ile	Ala	Ala	Lys	Lys	
2040					2045					2050					
acc	agg	gag	ttc	cga	tgt	cca	ccc	aga	gaa	cag	atg	aat	gct	att	6223
Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	
2055					2060					2065					
ctc	gga	ttc	aaa	aac	ttg	gaa	gaa	ggg	gat	ata	gag	aac	tgc	cca	6268
Leu	Gly	Phe	Lys	Asn	Leu	Glu	Glu	Gly	Asp	Ile	Glu	Asn	Cys	Pro	
2070					2075					2080					
tgt	gga	gat	gaa	ctt	aga	gag	cgg	ttg	aat	tct	ttc	cat	gag	aaa	6313
Cys	Gly	Asp	Glu	Leu	Arg	Glu	Arg	Leu	Asn	Ser	Phe	His	Glu	Lys	
2085					2090					2095					
tta	atg	cat	aaa	gta	tct	cta	ctg	gca	ctg	caa	gag	cca	tct	gaa	6358
Leu	Met	His	Lys	Val	Ser	Leu	Leu	Ala	Leu	Gln	Glu	Pro	Ser	Glu	
2100					2105					2110					
gag	gaa	gcg	tcc	gca	gaa	gaa	gtg	aaa	aaa	cct	aat	gcc	ctt	aac	6403
Glu	Glu	Ala	Ser	Ala	Glu	Glu	Val	Lys	Lys	Pro	Asn	Ala	Leu	Asn	
2115					2120					2125					
cgt	ctt	tat	aac	ttc	ata	aat	gcg	gtc	aaa	gag	ctt	gaa	gaa	act	6448
Arg	Leu	Tyr	Asn	Phe	Ile	Asn	Ala	Val	Lys	Glu	Leu	Glu	Glu	Thr	
2130					2135					2140					
cct	cag	ata	gaa	gaa	gag	cct	gag	aaa	aaa	act	cca	gaa	gaa	atc	6493
Pro	Gln	Ile	Glu	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Ile	
2145					2150					2155					
ttc	agg	aag	gtt	ctg	atc	agc	aca	att	gtc	aaa	tgg	gct	gaa	gag	6538
Phe	Arg	Lys	Val	Leu	Ile	Ser	Thr	Ile	Val	Lys	Trp	Ala	Glu	Glu	
2160					2165					2170					
act	caa	att	gaa	tca	cca	aaa	ctt	gtg	aga	gag	atg	ttc	agt	ttg	6583
Thr	Gln	Ile	Glu	Ser	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	
2175					2180					2185					
ttg	gta	cgt	cag	tat	gat	act	gtt	ggc	gaa	ctg	atc	cgt	gct	ctg	6628
Leu	Val	Arg	Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	
2190					2195					2200					
gga	aag	acg	tat	gtg	att	aac	agc	aaa	act	aag	gat	gat	gct	gcc	6673
Gly	Lys	Thr	Tyr	Val	Ile	Asn	Ser	Lys	Thr	Lys	Asp	Asp	Ala	Ala	
2205					2210					2215					
ttg	atg	tgg	gtt	gga	ctg	agt	cag	ata	cgt	gcc	tta	ttg	cct	gtg	6718
Leu	Met	Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	
2220					2225					2230					
caa	atg	tct	caa	gag	gaa	gaa	ggg	ctt	atg	cgc	gag	cgt	tta	tgg	6763
Gln	Met	Ser	Gln	Glu	Glu	Glu	Gly	Leu	Met	Arg	Glu	Arg	Leu	Trp	
2235					2240					2245					

aaa	ttg	gtc	aac	aat	cat	act	ttc	ttc	cag	cac	ccc	gat	ttg	ata	6808
Lys	Leu	Val	Asn	Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	
2250					2255					2260					
aga	gtg	ctg	cgt	gtg	cat	gaa	aac	gtg	atg	gca	gtg	atg	atg	aac	6853
Arg	Val	Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	
2265					2270					2275					
act	ctt	ggg	agg	cgg	gcc	caa	gcc	cag	tca	gac	gct	cct	caa	gct	6898
Thr	Leu	Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Gln	Ala	
2280					2285					2290					
ggg	cag	gaa	gga	gag	cca	gtg	gcc	aaa	gaa	aaa	gat	act	tct	cac	6943
Gly	Gln	Glu	Gly	Glu	Pro	Val	Ala	Lys	Glu	Lys	Asp	Thr	Ser	His	
2295					2300					2305					
gag	atg	gtt	gtg	gct	tgc	tgt	cgg	ttc	ctg	tgc	tac	ttc	tgt	aga	6988
Glu	Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	
2310					2315					2320					
aca	tcc	aga	cag	aat	cag	aaa	gct	atg	ttc	gat	cac	ttc	gca	ttt	7033
Thr	Ser	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Ala	Phe	
2325					2330					2335					
ctc	ctg	gaa	aac	agt	aat	att	tta	cta	tca	cgg	cct	tct	ttg	aga	7078
Leu	Leu	Glu	Asn	Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	
2340					2345					2350					
ggg	agc	act	cct	ctt	gat	gtt	gct	tat	tca	tca	ctc	atg	gag	aac	7123
Gly	Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	
2355					2360					2365					
acc	gag	ctc	gct	ctt	gcg	ctc	aga	gaa	cac	tac	ttg	gag	aaa	att	7168
Thr	Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	
2370					2375					2380					
gct	ata	tac	ttg	tcc	cga	tgt	gga	ctg	caa	tcc	aat	tct	gag	ttg	7213
Ala	Ile	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	
2385					2390					2395					
att	gaa	aag	ggc	tat	cct	gat	ctg	gga	tgg	gac	ccc	gtg	gaa	ggc	7258
Ile	Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	
2400					2405					2410					
gaa	aga	tac	ctt	gat	ttt	cta	cgt	ttc	tgc	gtc	tgg	gtt	aat	ggg	7303
Glu	Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	
2415					2420					2425					
gag	agt	gtt	gaa	gaa	aat	gcc	aat	ctt	gtt	atc	agg	ctg	ctg	att	7348
Glu	Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	
2430					2435					2440					
agg	agg	cct	gga	tgt	ctt	ggg	cca	gca	tta	aga	gga	gaa	gga	gag	7393
Arg	Arg	Pro	Gly	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	
2445					2450					2455					
ggg	tta	ctg	aga	gcg	att	gtt	gat	gcc	aac	aag	atg	tca	gaa	aga	7438
Gly	Leu	Leu	Arg	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	
2460					2465					2470					
att	gct	gat	cga	aga	aaa	gtg	atg	gat	gag	cca	gaa	ggg	aca	aca	7483
Ile	Ala	Asp	Arg	Arg	Lys	Val	Met	Asp	Glu	Pro	Glu	Gly	Thr	Thr	
2475					2480					2485					
atg	gtt	atg	cat	ttc	gaa	cac	cct	ctt	ccg	gaa	tca	gat	gat	gat	7528
Met	Val	Met	His	Phe	Glu	His	Pro	Leu	Pro	Glu	Ser	Asp	Asp	Asp	
2490					2495					2500					
gag	gat	tat	att	gat	act	ggg	gct	gca	atc	ctt	gca	ttc	tat	tgt	7573
Glu	Asp	Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Ala	Phe	Tyr	Cys	
2505					2510					2515					
act	ctg	gta	gat	tta	ctt	ggg	cgt	tgt	gct	cct	gat	tct	tct	gtc	7618
Thr	Leu	Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ser	Ser	Val	
2520					2525					2530					
att	gcc	caa	ggg	aaa	aat	gaa	tca	ttg	aga	gct	cga	gcc	atc	ttg	7663
Ile	Ala	Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	
2535					2540					2545					

cga	tct	cta	gta	cct	cta	gag	gat	ctc	cag	ggg	gtt	cta	agt	ctc	7708
Arg	Ser	Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	
2550					2555					2560					
aaa	ttc	act	ttg	caa	aat	cct	gca	gcg	ggg	gag	gaa	cgt	cct	aag	7753
Lys	Phe	Thr	Leu	Gln	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	
2565					2570					2575					
agt	gat	atg	ccc	tcc	ggc	ttg	att	cct	ggg	cac	aaa	caa	agt	gtc	7798
Ser	Asp	Met	Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	
2580					2585					2590					
gtt	ctc	ttc	ttg	gag	aga	gtc	tat	ggc	att	gaa	aca	caa	gaa	ctg	7843
Val	Leu	Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	
2595					2600					2605					
ttt	ttt	aga	cta	cta	gag	gag	gca	ttt	cta	cct	gac	ctc	aga	gca	7888
Phe	Phe	Arg	Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	
2610					2615					2620					
gct	act	atg	ctt	gac	agg	aat	gac	ggc	tct	gaa	tca	gat	atg	gca	7933
Ala	Thr	Met	Leu	Asp	Arg	Asn	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	
2625					2630					2635					
tta	gct	atg	aac	cgc	tac	att	ggc	aat	tcc	atc	ctg	cct	ttg	ttg	7978
Leu	Ala	Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	
2640					2645					2650					
att	act	cat	tca	aaa	ttc	tac	aac	gaa	gcg	gat	aat	tat	gcc	agc	8023
Ile	Thr	His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Asp	Asn	Tyr	Ala	Ser	
2655					2660					2665					
ttg	ttg	gat	gct	acg	ttg	cac	act	gta	tac	cgg	tta	tca	aag	aat	8068
Leu	Leu	Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	
2670					2675					2680					
aga	atg	ctc	acc	aaa	gga	caa	cga	gaa	gcg	gtt	tca	gac	ttt	ctt	8113
Arg	Met	Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	
2685					2690					2695					
gta	gct	ctg	acg	tct	tcc	atg	cag	ccg	agt	atg	ctg	ttg	aaa	ttg	8158
Val	Ala	Leu	Thr	Ser	Ser	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	
2700					2705					2710					
cta	aga	aaa	ttg	act	gtt	gac	gtt	tca	aaa	cta	act	gaa	tac	aca	8203
Leu	Arg	Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Thr	Glu	Tyr	Thr	
2715					2720					2725					
aca	gtt	gct	ctg	cga	ttg	ctc	act	ctt	cat	tat	gat	cgc	tgc	gcc	8248
Thr	Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Asp	Arg	Cys	Ala	
2730					2735					2740					
aaa	tat	tat	gga	tcg	act	ggg	gga	cag	ggg	cta	tat	gga	tcg	tca	8293
Lys	Tyr	Tyr	Gly	Ser	Thr	Gly	Gly	Gln	Gly	Leu	Tyr	Gly	Ser	Ser	
2745					2750					2755					
agc	gat	gag	gaa	aag	cgc	cta	acc	atg	atg	ctt	ttc	agc	aat	ata	8338
Ser	Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	
2760					2765					2770					
ttc	gat	tcc	ctc	tcg	aaa	atg	gat	tat	gat	cct	gaa	ctg	ttt	ggg	8383
Phe	Asp	Ser	Leu	Ser	Lys	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	
2775					2780					2785					
aaa	gct	ctg	ccg	tgc	ttg	aca	gct	att	ggc	tgt	gct	ctg	cca	ccc	8428
Lys	Ala	Leu	Pro	Cys	Leu	Thr	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	
2790					2795					2800					
gat	tat	tct	ctc	tcg	aag	aat	tat	gat	gat	gaa	ctg	tac	ggg	gca	8473
Asp	Tyr	Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Leu	Tyr	Gly	Ala	
2805					2810					2815					
aga	gat	tca	caa	gct	ggg	cca	tct	gat	ggc	cct	tat	aat	cct	cag	8518
Arg	Asp	Ser	Gln	Ala	Gly	Pro	Ser	Asp	Gly	Pro	Tyr	Asn	Pro	Gln	
2820					2825					2830					
cct	ata	aat	act	cat	agt	gtt	gtc	ctc	aac	aat	gac	ttg	aac	aca	8563
Pro	Ile	Asn	Thr	His	Ser	Val	Val	Leu	Asn	Asn	Asp	Leu	Asn	Thr	
2835					2840					2845					

ata	ggt	caa	aaa	ttc	tcc	gaa	cat	tat	cat	gat	gca	tgg	gcg	agc	8608
Ile	Val	Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	
2850					2855					2860					
agg	aag	cta	gag	aat	gga	tgg	act	tac	ggt	gat	cag	tgg	agt	gac	8653
Arg	Lys	Leu	Glu	Asn	Gly	Trp	Thr	Tyr	Gly	Asp	Gln	Trp	Ser	Asp	
2865					2870					2875					
tca	caa	aaa	act	cac	cca	agg	cta	aag	cca	tac	aat	atg	ctc	aac	8698
Ser	Gln	Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	
2880					2885					2890					
gac	tat	ggt	gaa	ccc	tca	atc	gaa	aga	gaa	cgt	tac	aaa	gag	cct	8743
Asp	Tyr	Val	Glu	Pro	Ser	Ile	Glu	Arg	Glu	Arg	Tyr	Lys	Glu	Pro	
2895					2900					2905					
gtc	aga	gag	tca	ata	aag	gct	ttg	ttg	gca	att	gga	tgg	act	gtg	8788
Val	Arg	Glu	Ser	Ile	Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp	Thr	Val	
2910					2915					2920					
gag	cac	agt	gaa	gca	gat	gtt	cca	ctc	act	agt	cga	gga	tca	att	8833
Glu	His	Ser	Glu	Ala	Asp	Val	Pro	Leu	Thr	Ser	Arg	Gly	Ser	Ile	
2925					2930					2935					
cgg	cga	cag	tcc	aag	cca	aat	gca	atg	gtc	gac	tct	tcc	act	cct	8878
Arg	Arg	Gln	Ser	Lys	Pro	Asn	Ala	Met	Val	Asp	Ser	Ser	Thr	Pro	
2940					2945					2950					
ttc	aac	tat	cat	cca	aat	cct	att	gat	atg	aca	aac	ctg	aca	ttg	8923
Phe	Asn	Tyr	His	Pro	Asn	Pro	Ile	Asp	Met	Thr	Asn	Leu	Thr	Leu	
2955					2960					2965					
ggc	aga	gag	atg	caa	aat	atg	gct	gag	cgt	tta	gct	gaa	aat	gct	8968
Gly	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ala	
2970					2975					2980					
cat	gac	att	tgg	gct	aag	aag	aaa	aaa	gag	gaa	ctc	ata	act	tgt	9013
His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Ile	Thr	Cys	
2985					2990					2995					
ggt	gga	gga	atc	cat	ccg	caa	ctc	gtg	ccg	tat	gac	ttg	ttg	act	9058
Gly	Gly	Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	
3000					3005					3010					
gat	aag	gaa	aag	aag	aag	gac	aga	gag	cga	tct	caa	gaa	ttc	ttg	9103
Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	
3015					3020					3025					
aaa	tat	ctg	caa	tat	caa	ggc	tat	aag	ttg	cac	agg	cct	agt	cgc	9148
Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Arg	
3030					3035					3040					
aca	ggg	ggt	cca	tcc	gag	tcg	gaa	caa	ttg	gca	gcc	caa	gca	act	9193
Thr	Gly	Gly	Pro	Ser	Glu	Ser	Glu	Gln	Leu	Ala	Ala	Gln	Ala	Thr	
3045					3050					3055					
ggt	gag	ctt	aga	ttt	gcg	tac	agc	ctg	ctc	gag	aag	ctc	atc	cag	9238
Gly	Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	
3060					3065					3070					
tac	att	gac	aga	gcc	tct	atc	aac	atg	aag	ctt	ctc	aaa	cct	tcg	9283
Tyr	Ile	Asp	Arg	Ala	Ser	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	
3075					3080					3085					
acg	aca	ttc	agc	cgc	cgc	tca	agc	ttt	aaa	act	tgc	aca	agg	gac	9328
Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Cys	Thr	Arg	Asp	
3090					3095					3100					
att	aaa	ttt	ttc	tca	aaa	gtc	ggt	cta	cca	ctt	gtg	gag	aaa	tat	9373
Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Val	Glu	Lys	Tyr	
3105					3110					3115					
ttc	agc	aca	cat	agg	aat	tac	ttt	att	gct	gta	gcg	acc	gca	tcg	9418
Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Ser	
3120					3125					3130					
aat	aat	att	gga	gca	gca	tcg	ttg	aaa	gaa	aaa	gaa	atg	gta	gct	9463
Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	
3135					3140					3145					



agt	cta	ttc	tgc	aaa	ctt	gca	aac	ttg	cta	aga	tct	cga	ttg	gct	9508
Ser	Leu	Phe	Cys	Lys	Leu	Ala	Asn	Leu	Leu	Arg	Ser	Arg	Leu	Ala	
3150					3155					3160					
gct	ttt	ggg	gct	gat	gtt	cga	att	tct	gtg	aaa	tgt	tta	caa	gtg	9553
Ala	Phe	Gly	Ala	Asp	Val	Arg	Ile	Ser	Val	Lys	Cys	Leu	Gln	Val	
3165					3170					3175					
ctc	gta	aaa	gga	att	gat	gca	aaa	tcg	ctg	gta	aag	aat	tgt	cca	9598
Leu	Val	Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	
3180					3185					3190					
gaa	ttt	atc	aga	aca	tcg	atg	cta	acg	ttt	ttc	aat	aat	aca	gct	9643
Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Thr	Ala	
3195					3200					3205					
gat	gac	ttg	gga	cac	aca	att	caa	aac	tta	caa	gag	ggc	aaa	tac	9688
Asp	Asp	Leu	Gly	His	Thr	Ile	Gln	Asn	Leu	Gln	Glu	Gly	Lys	Tyr	
3210					3215					3220					
agt	cat	ctg	cgt	gga	gca	cat	ctg	aaa	acg	tct	acc	tcg	cta	ttc	9733
Ser	His	Leu	Arg	Gly	Ala	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Phe	
3225					3230					3235					
tac	atc	aat	gac	gtc	atc	ctt	cca	gtt	tta	acg	gcc	atg	ttc	gat	9778
Tyr	Ile	Asn	Asp	Val	Ile	Leu	Pro	Val	Leu	Thr	Ala	Met	Phe	Asp	
3240					3245					3250					
cac	tta	gct	gca	tgc	gaa	tat	ggc	agt	gac	ttg	gta	ttg	gat	gaa	9823
His	Leu	Ala	Ala	Cys	Glu	Tyr	Gly	Ser	Asp	Leu	Val	Leu	Asp	Glu	
3255					3260					3265					
ata	caa	gtg	gcg	tca	tat	aaa	atg	ctt	ggg	agc	ttg	tac	aca	tta	9868
Ile	Gln	Val	Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Thr	Leu	
3270					3275					3280					
gga	att	gat	gtc	act	ctc	act	cat	gac	agg	aaa	tac	ttg	aag	act	9913
Gly	Ile	Asp	Val	Thr	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	
3285					3290					3295					
gaa	atc	gac	aga	cat	cga	ccg	caa	ctt	gga	aga	tgt	ctt	gga	gcc	9958
Glu	Ile	Asp	Arg	His	Arg	Pro	Gln	Leu	Gly	Arg	Cys	Leu	Gly	Ala	
3300					3305					3310					
tat	gca	tca	act	ttt	cca	gta	gca	ttt	ttg	gag	ccg	cat	ttg	aac	10003
Tyr	Ala	Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	
3315					3320					3325					
aaa	cac	aac	caa	ttc	tcc	tta	gtc	aat	cgt	ata	gct	gac	cat	tct	10048
Lys	His	Asn	Gln	Phe	Ser	Leu	Val	Asn	Arg	Ile	Ala	Asp	His	Ser	
3330					3335					3340					
tta	gaa	gct	caa	gat	att	ctt	tct	cga	atg	gaa	agt	aca	atg	cca	10093
Leu	Glu	Ala	Gln	Asp	Ile	Leu	Ser	Arg	Met	Glu	Ser	Thr	Met	Pro	
3345					3350					3355					
act	tta	gac	aac	att	ttg	agt	gaa	gtt	gat	cag	ttt	gta	gag	tcg	10138
Thr	Leu	Asp	Asn	Ile	Leu	Ser	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	
3360					3365					3370					
gat	aaa	acc	cat	aac	gat	gca	cct	cat	att	att	gat	gtg	ata	atg	10183
Asp	Lys	Thr	His	Asn	Asp	Ala	Pro	His	Ile	Ile	Asp	Val	Ile	Met	
3375					3380					3385					
cca	atg	cta	tgc	tcc	tat	ttg	cct	gtt	tggt	tggt	aat	caa	gga	cct	10228
Pro	Met	Leu	Cys	Ser	Tyr	Leu	Pro	Val	Trp	Trp	Asn	Gln	Gly	Pro	
3390					3395					3400					
gat	aat	gtt	gct	ctc	act	gcc	gga	aat	tat	gtc	aca	acg	gtg	acg	10273
Asp	Asn	Val	Ala	Leu	Thr	Ala	Gly	Asn	Tyr	Val	Thr	Thr	Val	Thr	
3405					3410					3415					
agt	gaa	cat	atg	aat	caa	ctt	tta	aag	aat	gta	ctc	aaa	atg	att	10318
Ser	Glu	His	Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Met	Ile	
3420					3425					3430					
aag	aaa	aat	att	gga	aat	gaa	agc	gct	cca	tggt	atg	act	agg	ata	10363
Lys	Lys	Asn	Ile	Gly	Asn	Glu	Ser	Ala	Pro	Trp	Met	Thr	Arg	Ile	
3435					3440					3445					

gca	gca	tat	aca	caa	caa	ata	ata	atc	aac	tct	tcg	gag	gag	ttg	10408
Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	
3450					3455					3460					
ttg	aaa	gat	cca	ttc	ctc	cca	ttg	gct	gaa	aga	gtg	aag	aaa	cgg	10453
Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Lys	Lys	Arg	
3465					3470					3475					
act	gat	gct	atg	ttt	cat	aaa	gag	gaa	tca	ctc	agg	gga	ttc	ata	10498
Thr	Asp	Ala	Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	
3480					3485					3490					
aaa	tcg	gcc	tct	gat	gac	act	tct	cag	att	gaa	gcg	caa	att	caa	10543
Lys	Ser	Ala	Ser	Asp	Asp	Thr	Ser	Gln	Ile	Glu	Ala	Gln	Ile	Gln	
3495					3500					3505					
gaa	gat	tggt	caa	ctt	ctt	gtg	aga	gat	atc	tac	tca	ttc	tat	cca	10588
Glu	Asp	Trp	Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	
3510					3515					3520					
ctt	ctc	atc	aag	tac	gtt	gac	ttg	caa	agg	aat	cat	tggt	ttg	aga	10633
Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	
3525					3530					3535					
aat	aat	att	tct	gaa	gct	gaa	gac	ttg	tat	aat	cat	gta	gca	gaa	10678
Asn	Asn	Ile	Ser	Glu	Ala	Glu	Asp	Leu	Tyr	Asn	His	Val	Ala	Glu	
3540					3545					3550					
atc	ttc	aat	act	tggt	tcg	aag	tct	caa	tat	ttc	ctc	aaa	gaa	gaa	10723
Ile	Phe	Asn	Thr	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	
3555					3560					3565					
cag	aac	ttc	att	tcg	gcg	aat	gaa	att	gat	aat	atg	ggt	ctc	atc	10768
Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	
3570					3575					3580					
atg	ccc	acg	gct	act	agg	aga	agt	gcc	gta	gtc	agt	gac	agt	gct	10813
Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala	Val	Val	Ser	Asp	Ser	Ala	
3585					3590					3595					
gct	ccc	cct	gga	ggc	agc	ggt	aag	aaa	aag	aag	aag	aac	aga	gag	10858
Ala	Pro	Pro	Gly	Gly	Ser	Gly	Lys	Lys	Lys	Lys	Lys	Asn	Arg	Glu	
3600					3605					3610					
aag	aag	agg	gac	aag	gac	aaa	gag	ctt	caa	gcc	agt	cta	atg	ggt	10903
Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Leu	Gln	Ala	Ser	Leu	Met	Val	
3615					3620					3625					
gct	tgc	ttg	aag	agg	ctg	ctt	cct	ggt	ggt	ttg	aat	ctc	ttt	gct	10948
Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	
3630					3635					3640					
gga	cga	gaa	caa	gaa	ctg	gtt	cag	cat	tgc	aaa	gac	aga	ttc	ctg	10993
Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	
3645					3650					3655					
aag	aaa	atg	caa	gac	tat	gaa	ata	gtg	gaa	ttt	gct	aag	att	caa	11038
Lys	Lys	Met	Gln	Asp	Tyr	Glu	Ile	Val	Glu	Phe	Ala	Lys	Ile	Gln	
3660					3665					3670					
ttg	acc	ctt	cct	gac	aaa	cta	gat	cca	ggt	gat	gag	atg	tcg	tggt	11083
Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Gly	Asp	Glu	Met	Ser	Trp	
3675					3680					3685					
cag	cac	tat	ctg	tat	tcc	act	ctg	ggc	agt	aag	aaa	gag	atc	acc	11128
Gln	His	Tyr	Leu	Tyr	Ser	Thr	Leu	Gly	Ser	Lys	Lys	Glu	Ile	Thr	
3690					3695					3700					
gaa	gga	ggc	aaa	cct	gaa	cag	atc	gat	gcg	gtc	gtt	gac	agg	att	11173
Glu	Gly	Gly	Lys	Pro	Glu	Gln	Ile	Asp	Ala	Val	Val	Asp	Arg	Ile	
3705					3710					3715					
gtt	gcc	atg	gct	aaa	gtt	ctg	ttc	ggt	ctg	cat	atg	att	gac	cac	11218
Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His	
3720					3725					3730					
cct	cag	ctg	caa	agc	aag	gcc	agt	tat	cgg	tcg	gtt	gtt	tca	acc	11263
Pro	Gln	Leu	Gln	Ser	Lys	Ala	Ser	Tyr	Arg	Ser	Val	Val	Ser	Thr	
3735					3740					3745					

caa	cgt	aaa	cga	gca	gtc	att	gct	tgt	ttc	aga	cag	cta	tca	cta	11308
Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Leu	Ser	Leu	
3750					3755					3760					
cac	gct	tta	cca	agg	cat	aaa	gct	atc	aac	ata	ttt	gct	aga	tcg	11353
His	Ala	Leu	Pro	Arg	His	Lys	Ala	Ile	Asn	Ile	Phe	Ala	Arg	Ser	
3765					3770					3775					
tat	tac	gag	ctg	tgg	ctg	act	gaa	gag	aat	gtt	gga	acc	gag	gtt	11398
Tyr	Tyr	Glu	Leu	Trp	Leu	Thr	Glu	Glu	Asn	Val	Gly	Thr	Glu	Val	
3780					3785					3790					
ttg	att	gaa	gac	ctc	acg	caa	tca	ttt	gaa	gat	gct	gaa	ctc	aag	11443
Leu	Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	Leu	Lys	
3795					3800					3805					
aaa	aca	gat	gaa	gaa	gta	gat	gaa	ggg	aag	tca	gat	ccg	ctg	aca	11488
Lys	Thr	Asp	Glu	Glu	Val	Asp	Glu	Gly	Lys	Ser	Asp	Pro	Leu	Thr	
3810					3815					3820					
cag	ctt	gtg	aca	aca	ttc	tgc	aga	gga	gca	atg	act	gag	cga	agc	11533
Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	
3825					3830					3835					
ggc	gcc	ctc	cag	gaa	gac	cct	ctc	tac	atg	tcc	tat	gct	gag	atc	11578
Gly	Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	Glu	Ile	
3840					3845					3850					
gct	gcc	aag	tct	tgt	ggc	gaa	gag	gaa	gaa	gaa	ggg	ggg	gat	gaa	11623
Ala	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly	Asp	Glu	
3855					3860					3865					
gag	gaa	gga	gga	gaa	gga	gaa	gaa	cag	ggg	gcc	tca	ata	cac	gaa	11668
Glu	Glu	Gly	Gly	Glu	Gly	Glu	Glu	Gln	Gly	Ala	Ser	Ile	His	Glu	
3870					3875					3880					
caa	gaa	atg	gaa	aag	cag	aag	ctg	ctc	ttc	cat	caa	tca	aga	ctg	11713
Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ser	Arg	Leu	
3885					3890					3895					
gct	aat	aga	ggc	gtg	gca	gag	atg	gtg	tta	ttg	cac	att	tcc	gct	11758
Ala	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile	Ser	Ala	
3900					3905					3910					
tgc	aat	ggg	gtt	cca	agt	gat	atg	gtg	gag	aaa	acg	ctt	caa	ctt	11803
Cys	Asn	Gly	Val	Pro	Ser	Asp	Met	Val	Glu	Lys	Thr	Leu	Gln	Leu	
3915					3920					3925					
ggg	ata	tcg	att	ctt	cga	ggg	ggc	aac	att	gat	atc	caa	atg	gga	11848
Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln	Met	Gly	
3930					3935					3940					
atg	ctg	aat	cac	cta	aaa	gaa	aag	aaa	gat	gtg	gga	ttt	ttt	aca	11893
Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe	Phe	Thr	
3945					3950					3955					
tct	atc	gct	gga	tta	atg	aat	tcc	tgc	agt	gta	ctg	gat	ttg	gac	11938
Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp	Leu	Asp	
3960					3965					3970					
gca	ttt	gag	cgc	aat	acg	aag	gca	gag	ggc	ttg	ggc	gtg	gga	tcg	11983
Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val	Gly	Ser	
3975					3980					3985					
gat	ggc	gca	gct	ggg	gag	aag	aac	atg	cac	gac	gct	gag	ttc	acc	12028
Asp	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu	Phe	Thr	
3990					3995					4000					
tgc	aca	ttg	ttc	aga	ttc	att	caa	ttg	aca	tgt	gaa	ggg	cac	aat	12073
Cys	Thr	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly	His	Asn	
4005					4010					4015					
ctt	gaa	tgg	cag	aat	tat	ttg	aga	act	caa	gca	gga	aac	act	aca	12118
Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn	Thr	Thr	
4020					4025					4030					
acc	gtg	aac	gtt	gtc	ata	tgt	acc	gta	gat	tat	ctt	ctg	aga	cta	12163
Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu	Arg	Leu	
4035					4040					4045					

cag	gaa	tca	atc	atg	gac	ttt	tat	tgg	cat	tat	tcg	agc	aaa	gaa	12208
Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser	Lys	Glu	
4050					4055					4060					
ttg	att	gac	cca	gca	gga	aaa	gcc	aat	ttt	ttt	aaa	gct	ata	gga	12253
Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala	Ile	Gly	
4065					4070					4075					
ggt	gct	agt	cag	ggt	ttc	aac	aca	ttg	tct	gag	ggt	att	caa	ggt	12298
Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Ser	Glu	Val	Ile	Gln	Gly	
4080					4085					4090					
gct	tgt	act	cag	aac	cag	caa	gct	ttg	gct	cat	tcc	aaa	ttg	tgg	12343
Ala	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Lys	Leu	Trp	
4095					4100					4105					
gac	gct	gtc	ggg	ggg	ttc	cta	ttt	tta	ttc	tct	cat	atg	caa	gat	12388
Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met	Gln	Asp	
4110					4115					4120					
aag	cta	tca	aag	cat	tca	agt	caa	gtc	gac	ctt	ctc	aag	gaa	ctg	12433
Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys	Glu	Leu	
4125					4130					4135					
cta	aat	cta	cag	aaa	gac	atg	atc	acc	atg	atg	tta	tct	atg	ctt	12478
Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser	Met	Leu	
4140					4145					4150					
gaa	gga	aat	ggt	gta	aat	ggg	act	att	gga	aaa	cag	atg	ggt	gat	12523
Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	
4155					4160					4165					
act	ttg	ggt	gaa	tct	gct	tca	aat	ggt	gag	ttg	att	ctg	aaa	tat	12568
Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu	Lys	Tyr	
4170					4175					4180					
ttt	gat	atg	ttc	ctg	aaa	cta	aaa	gac	atg	act	gaa	gca	cct	agc	12613
Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Met	Thr	Glu	Ala	Pro	Ser	
4185					4190					4195					
ttc	ttg	gaa	atc	gat	ccg	aat	cac	gat	ggg	tgg	ggt	cta	ccc	aaa	12658
Phe	Leu	Glu	Ile	Asp	Pro	Asn	His	Asp	Gly	Trp	Val	Leu	Pro	Lys	
4200					4205					4210					
gat	ttc	aaa	gag	aaa	atg	gaa	caa	caa	aag	agc	tat	aca	aca	gaa	12703
Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	Ser	Tyr	Thr	Thr	Glu	
4215					4220					4225					
gaa	att	agc	ttc	atg	ctg	cag	tgt	tgt	gaa	act	aat	cac	gat	gga	12748
Glu	Ile	Ser	Phe	Met	Leu	Gln	Cys	Cys	Glu	Thr	Asn	His	Asp	Gly	
4230					4235					4240					
aag	ggt	gat	tac	att	ggc	ttc	ggt	gac	aga	ttc	cat	gaa	cct	tcc	12793
Lys	Val	Asp	Tyr	Ile	Gly	Phe	Val	Asp	Arg	Phe	His	Glu	Pro	Ser	
4245					4250					4255					
aaa	gaa	atc	ggg	ttc	aac	ttg	gct	gta	tta	tta	aca	aac	cta	tct	12838
Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser	
4260					4265					4270					
gag	cac	atg	ccg	aat	gag	ccc	agg	ttg	gct	aga	ttt	ttg	gaa	act	12883
Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe	Leu	Glu	Thr	
4275					4280					4285					
gca	ggc	agt	gta	cta	aat	tac	ttt	gaa	cca	ttc	cta	gga	cgt	att	12928
Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu	Gly	Arg	Ile	
4290					4295					4300					
gaa	att	atg	ggc	agc	agt	aaa	cgt	ata	gaa	aga	gtg	tat	ttt	gaa	12973
Glu	Ile	Met	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu	
4305					4310					4315					
atc	aag	gag	tca	aat	att	gaa	cag	tgg	gag	aaa	cct	caa	att	aaa	13018
Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro	Gln	Ile	Lys	
4320					4325					4330					
gag	tcc	aag	aga	gca	ttc	ttc	tac	tca	atc	gtg	act	gaa	ggg	ggg	13063
Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr	Glu	Gly	Gly	
4335					4340					4345					

gat	aaa	gaa	aag	ctg	gag	gca	ttt	gta	aat	ttc	tgt	gag	gat	gca	13108
Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys	Glu	Asp	Ala	
4350					4355					4360					
att	ttt	gaa	atg	act	cat	gcc	agt	ggt	tta	atg	tca	gtc	gat	gat	13153
Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ser	Val	Asp	Asp	
4365					4370					4375					
gac	tca	ggc	ggc	ggt	gga	ggc	aaa	gct	gct	tac	aca	tac	atc	tcc	13198
Asp	Ser	Gly	Gly	Gly	Gly	Gly	Lys	Ala	Ala	Tyr	Thr	Tyr	Ile	Ser	
4380					4385					4390					
gaa	gaa	gac	gaa	gaa	aag	aat	gca	aaa	gat	ccc	atc	agg	aga	acg	13243
Glu	Glu	Asp	Glu	Glu	Lys	Asn	Ala	Lys	Asp	Pro	Ile	Arg	Arg	Thr	
4395					4400					4405					
att	caa	gct	ttc	aag	gat	gca	att	tat	ttc	ata	ctc	act	atg	ctg	13288
Ile	Gln	Ala	Phe	Lys	Asp	Ala	Ile	Tyr	Phe	Ile	Leu	Thr	Met	Leu	
4410					4415					4420					
tct	ccg	tca	aac	atc	aaa	acc	aaa	ata	aat	gaa	atg	cag	cag	atg	13333
Ser	Pro	Ser	Asn	Ile	Lys	Thr	Lys	Ile	Asn	Glu	Met	Gln	Gln	Met	
4425					4430					4435					
agt	gta	ccg	gag	cta	gtt	gtt	ggc	ttt	ttc	aaa	ata	ttc	ttt	tac	13378
Ser	Val	Pro	Glu	Leu	Val	Val	Gly	Phe	Phe	Lys	Ile	Phe	Phe	Tyr	
4440					4445					4450					
atg	ttc	tac	tat	tca	gga	ttt	agt	gta	tca	gtt	gtt	ctt	aga	tat	13423
Met	Phe	Tyr	Tyr	Ser	Gly	Phe	Ser	Val	Ser	Val	Val	Leu	Arg	Tyr	
4455					4460					4465					
ttt	gga	agg	ata	ttg	atg	aca	tta	atg	agg	gga	cca	caa	act	gaa	13468
Phe	Gly	Arg	Ile	Leu	Met	Thr	Leu	Met	Arg	Gly	Pro	Gln	Thr	Glu	
4470					4475					4480					
gaa	cca	gtt	gcg	gaa	gtt	aaa	aag	gaa	gat	gag	ata	atg	gga	ccg	13513
Glu	Pro	Val	Ala	Glu	Val	Lys	Lys	Glu	Asp	Glu	Ile	Met	Gly	Pro	
4485					4490					4495					
att	aga	gct	cta	ccg	ccc	cct	cca	ccc	gat	aat	aaa	gaa	gca	tca	13558
Ile	Arg	Ala	Leu	Pro	Pro	Pro	Pro	Pro	Asp	Asn	Lys	Glu	Ala	Ser	
4500					4505					4510					
tct	tcc	tct	gcc	aaa	gat	gac	agt	ggc	caa	gcc	aag	cct	gcc	gat	13603
Ser	Ser	Ser	Ala	Lys	Asp	Asp	Ser	Gly	Gln	Ala	Lys	Pro	Ala	Asp	
4515					4520					4525					
gga	ggt	gct	aca	tta	gca	tta	act	gcc	agt	ggg	gaa	gaa	cat	aaa	13648
Gly	Gly	Ala	Thr	Leu	Ala	Leu	Thr	Ala	Ser	Gly	Glu	Glu	His	Lys	
4530					4535					4540					
gaa	ggt	gga	gca	act	gag	gaa	gga	gcc	gaa	gat	gga	gcg	aag	cca	13693
Glu	Gly	Gly	Ala	Thr	Glu	Glu	Gly	Ala	Glu	Asp	Gly	Ala	Lys	Pro	
4545					4550					4555					
gaa	ggt	gcc	gaa	acc	act	gaa	gga	act	acc	atg	acc	ctg	gct	gat	13738
Glu	Gly	Ala	Glu	Thr	Thr	Glu	Gly	Thr	Thr	Met	Thr	Leu	Ala	Asp	
4560					4565					4570					
ctc	tta	gga	gga	gaa	gca	gct	cgc	aaa	gaa	gca	gta	gct	aga	gct	13783
Leu	Leu	Gly	Gly	Glu	Ala	Ala	Arg	Lys	Glu	Ala	Val	Ala	Arg	Ala	
4575					4580					4585					
gaa	gta	gct	gct	gaa	caa	caa	gct	gtc	atg	gct	gct	gtt	gag	gct	13828
Glu	Val	Ala	Ala	Glu	Gln	Gln	Ala	Val	Met	Ala	Ala	Val	Glu	Ala	
4590					4595					4600					
gaa	gca	aag	cat	gaa	gtt	gtg	tcg	gaa	cca	tcc	gcg	ttc	tca	cag	13873
Glu	Ala	Lys	His	Glu	Val	Val	Ser	Glu	Pro	Ser	Ala	Phe	Ser	Gln	
4605					4610					4615					
att	gac	ttc	aat	aga	tat	aca	cat	cgt	gct	gta	agt	ttt	ctt	gct	13918
Ile	Asp	Phe	Asn	Arg	Tyr	Thr	His	Arg	Ala	Val	Ser	Phe	Leu	Ala	
4620					4625					4630					
agg	aat	ttc	tac	aac	ttg	aag	tat	gtc	gcg	ctg	gtt	ctt	gct	ttt	13963
Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe	
4635					4640					4645					

tgc	ata	aat	ttc	atc	ctg	ctc	ttc	tat	aag	gtt	aca	act	ctg	ggt	14008
Cys	Ile	Asn	Phe	Ile	Leu	Leu	Phe	Tyr	Lys	Val	Thr	Thr	Leu	Gly	
4650					4655					4660					
gaa	gat	gaa	gat	gac	ggt	ggc	agt	ggt	gag	ctg	gga	ggt	gga	ttg	14053
Glu	Asp	Glu	Asp	Asp	Gly	Gly	Ser	Gly	Glu	Leu	Gly	Gly	Gly	Leu	
4665					4670					4675					
gct	gaa	gat	cta	ttg	gag	gag	ctg	gga	ggg	ggg	tca	gga	gaa	gag	14098
Ala	Glu	Asp	Leu	Leu	Glu	Glu	Leu	Gly	Gly	Gly	Ser	Gly	Glu	Glu	
4680					4685					4690					
ggt	gga	gga	ctg	agt	gga	ggt	ata	agt	gga	ggc	gag	agt	ggc	gaa	14143
Gly	Gly	Gly	Leu	Ser	Gly	Gly	Ile	Ser	Gly	Gly	Glu	Ser	Gly	Glu	
4695					4700					4705					
gac	gga	agt	ggc	gag	gag	gag	gat	cct	ata	gag	ctg	gtg	cac	gtg	14188
Asp	Gly	Ser	Gly	Glu	Glu	Glu	Asp	Pro	Ile	Glu	Leu	Val	His	Val	
4710					4715					4720					
aac	gag	gac	ttc	ttc	tac	atg	gct	cat	gtt	atg	aag	atc	gct	gct	14233
Asn	Glu	Asp	Phe	Phe	Tyr	Met	Ala	His	Val	Met	Lys	Ile	Ala	Ala	
4725					4730					4735					
atg	ctg	cat	tct	ctt	gta	tct	cta	gcc	atg	ctc	atc	gcc	tac	tat	14278
Met	Leu	His	Ser	Leu	Val	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	
4740					4745					4750					
cat	ctc	aag	gta	cca	cta	gct	ata	ttc	aaa	cga	gaa	aag	gaa	ata	14323
His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	
4755					4760					4765					
gca	cga	cga	ttg	gag	ttt	gat	gga	tta	tac	ata	gcc	gaa	caa	cct	14368
Ala	Arg	Arg	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	Gln	Pro	
4770					4775					4780					
gaa	gat	gat	gac	ata	aaa	tca	cac	tgg	gat	aaa	ttg	gtc	ata	tca	14413
Glu	Asp	Asp	Asp	Ile	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	
4785					4790					4795					
gct	aaa	tca	ttt	cct	gtc	aat	tac	tgg	gac	aaa	ttt	gta	aag	aag	14458
Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	
4800					4805					4810					
aag	gtc	agg	caa	aag	tat	agc	gaa	act	tat	gat	ttc	gat	tca	ata	14503
Lys	Val	Arg	Gln	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	
4815					4820					4825					
agc	act	cta	ctg	ggg	atg	gaa	aaa	aca	tca	ttc	agc	tcc	caa	gaa	14548
Ser	Thr	Leu	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ser	Gln	Glu	
4830					4835					4840					
act	gaa	gaa	gga	act	gga	att	atc	aac	ttc	ata	ttg	aat	ata	gat	14593
Thr	Glu	Glu	Gly	Thr	Gly	Ile	Ile	Asn	Phe	Ile	Leu	Asn	Ile	Asp	
4845					4850					4855					
tgg	cga	tat	caa	gtt	tgg	aaa	gct	ggc	gtc	act	ata	acc	gac	aat	14638
Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	Asp	Asn	
4860					4865					4870					
gcg	ttc	tta	tac	agt	tta	tgg	tat	ttc	ata	ttc	tca	att	ctt	ggc	14683
Ala	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ile	Phe	Ser	Ile	Leu	Gly	
4875					4880					4885					
aat	ttt	aat	aat	ttc	ttc	ttc	gct	gct	cat	ttg	ctg	gat	gtt	gct	14728
Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	
4890					4895					4900					
gtt	gga	ttc	aaa	aca	ttg	aga	acg	atc	tta	cag	tct	gtc	acg	cac	14773
Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	
4905					4910					4915					
aat	gga	aaa	cag	ttg	gtt	ttg	aca	gtc	atg	ctc	ctc	aca	atc	att	14818
Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	
4920					4925					4930					
gtg	tat	att	tac	aca	gta	atc	gcc	ttc	aac	ttc	ttc	cgt	aaa	ttc	14863
Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	
4935					4940					4945					

tat	gtc	caa	gaa	gaa	gat	gaa	gaa	gtt	gat	aaa	aag	tgt	cat	gat	14908
Tyr	Val	Gln	Glu	Glu	Asp	Glu	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	
4950					4955					4960					
atg	tta	aca	tgt	ttt	gta	ttc	cac	tta	tac	aaa	gga	gta	aga	gct	14953
Met	Leu	Thr	Cys	Phe	Val	Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	
4965					4970					4975					
ggg	agt	gga	att	gga	gat	gaa	atc	gaa	cca	cct	gat	ggc	gat	gat	14998
Gly	Ser	Gly	Ile	Gly	Asp	Glu	Ile	Glu	Pro	Pro	Asp	Gly	Asp	Asp	
4980					4985					4990					
tac	gaa	gtg	tac	cgt	atc	atg	ttt	gac	att	act	ttc	ttc	ttc	ttt	15043
Tyr	Glu	Val	Tyr	Arg	Ile	Met	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	
4995					5000					5005					
gtc	att	gtt	att	ctg	ctg	gct	atc	atc	cag	ggg	ttg	att	att	gac	15088
Val	Ile	Val	Ile	Leu	Leu	Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	
5010					5015					5020					
gct	ttt	ggg	gag	ctg	aga	gat	cag	ttg	gag	agc	gta	aag	gaa	gac	15133
Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	Glu	Asp	
5025					5030					5035					
atg	gag	tcc	aac	tgt	ttc	att	tgt	ggc	att	ggg	aaa	gac	tac	ttt	15178
Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Gly	Lys	Asp	Tyr	Phe	
5040					5045					5050					
gat	aaa	gtg	ccg	cat	ggg	ttc	gat	act	cat	gtg	cag	caa	gag	cat	15223
Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Gln	Glu	His	
5055					5060					5065					
aat	ctc	gct	aat	tac	atg	ttc	ttc	ctc	atg	cat	cta	att	aat	aag	15268
Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	
5070					5075					5080					
cca	gat	aca	gag	tat	act	ggg	caa	gag	acg	tat	gtg	tgg	aat	atg	15313
Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	
5085					5090					5095					
tac	caa	caa	agg	tgt	tgg	gac	ttc	ttt	cca	gtt	ggg	gac	tgt	ttc	15358
Tyr	Gln	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	
5100					5105					5110					
cgt	aag	caa	tat	gaa	gat	gag	tta	gga	ggc	ggg	ggg	ggc	tgagtaaagg	15407	
Arg	Lys	Gln	Tyr	Glu	Asp	Glu	Leu	Gly	Gly	Gly	Gly	Gly			
5115					5120					5125					
gcgaat															15413

<210> 8  
 <211> 5127  
 <212> PRT  
 <213> Peregrinus maidis

<220>  
 <221> misc\_feature  
 <222> (416)..(416)  
 <223> Xaa = Ile

<400> 8  
 Met Ala Asp Ser Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15  
 Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45

Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Thr Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Glu Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Ser Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175  
 Thr Thr Lys Glu Asn Asp Leu Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Ser Glu Ala Pro Gly  
 225 230 235 240  
 Gln Asn Ile Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly Phe  
 260 265 270  
 Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Leu Thr Thr Gly Arg  
 275 280 285  
 Tyr Leu Gly Val Asn Glu Asn Asn Glu Leu His Leu Ile Val Arg Asp  
 290 295 300  
 Glu Ala Thr Thr Ala Leu Ser Ala Phe Cys Leu Arg Gln Glu Lys Asp  
 305 310 315 320  
 Asp Gln Lys Val Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ala  
 325 330 335  
 Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val Leu Val Gln His Ser Glu  
 340 345 350  
 Thr Gly Leu Trp Leu Thr Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly  
 355 360 365



Val Gly Lys Val Glu Glu Lys Gln Ala Val Leu His Glu Glu Gly Lys  
370 375 380  
Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Arg  
385 390 395 400  
Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Xaa  
405 410 415  
Arg Gly Leu Glu Thr Leu Gln Val Asn Arg Arg His Ser Leu Phe Cys  
420 425 430  
Ala Thr Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile  
435 440 445  
Asn Tyr Phe Ala Gln Pro Ala Asp Asp Met Glu His Glu Glu Lys Gln  
450 455 460  
Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu  
465 470 475 480  
Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Val Ile  
485 490 495  
Thr Ser Gln Gly Phe Leu Val Ser Leu Ala Gly Asp Glu Ser Gly Gln  
500 505 510  
Ser Trp Asp Ile Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala Ala Ile  
515 520 525  
Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg  
530 535 540  
Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly  
545 550 555 560  
Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
565 570 575  
Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu  
580 585 590  
Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser  
595 600 605  
Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile  
610 615 620  
Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Pro Gln Thr Gln Leu  
625 630 635 640  
Val Asp His Val Ala Ser Val Arg Pro Asn Ile Phe Val Gly Arg Val  
645 650 655  
Val Gly Ser Ala Val Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
660 665 670  
His Ile Glu Gln Thr Thr His Met Thr Pro His Leu Arg Ile Gly Trp  
675 680 685

Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Glu Lys Trp  
 690 695 700  
 Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Tyr Gly Phe Asp Gly  
 705 710 715 720  
 Ala Asn Leu Trp Thr Gly Gly Arg Lys Thr Cys Val Leu Pro His Ala  
 725 730 735  
 Thr Glu Pro Phe Ile Lys Lys Gly Asp Val Ile Gly Val Ser Leu Asp  
 740 745 750  
 Leu Thr Val Pro Ile Ile Thr Phe Ser Phe Asn Gly Ser Pro Ile Arg  
 755 760 765  
 Gly Cys Phe Arg Asp Phe Asn Tyr Asp Gly Met Phe Phe Pro Val Ile  
 770 775 780  
 Ser Cys Ser His Lys Leu Ser Cys Arg Phe Leu Leu Gly Gly Asp His  
 785 790 795 800  
 Gly Arg Leu Lys Tyr Val Pro Pro Glu Glu Phe Ser Pro Leu Val Glu  
 805 810 815  
 Ser Leu Leu Pro Gln Gln Val Leu Ser Ile Asp Pro Cys Phe Tyr Phe  
 820 825 830  
 Gly Asn Leu Asn Lys Cys Val Leu Ser Gly Pro Trp Thr Val Glu Asp  
 835 840 845  
 Asp Thr Ala Phe Val Pro Thr Pro Val Asp Thr Thr Lys Val Ser Leu  
 850 855 860  
 Pro Asn Tyr Ile Glu Ser Ile Arg Asp Lys Leu Ala Glu Asn Ile His  
 865 870 875 880  
 Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Met Phe Gly Glu  
 885 890 895  
 Lys Arg Asp Asp Ile Arg Lys Val His Pro Cys Leu Ile Gln Phe Asp  
 900 905 910  
 Gln Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ser Gln Leu Ala Val Gln  
 915 920 925  
 Thr Leu Lys Thr Ile Leu Ala Leu Gly Tyr Tyr Ile Thr Met Asp Lys  
 930 935 940  
 Pro Pro Ser Arg Ile Lys Thr Ile Arg Leu Pro Asn Glu Pro Phe Met  
 945 950 955 960  
 Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Thr Ala Ile Ser  
 965 970 975  
 Leu Thr Pro Lys Met Glu Glu Leu Val Asp Gln Leu Ala Glu Asn Thr  
 980 985 990  
 His Asn Leu Trp Ala Lys Glu Arg Ile Gln Gln Gly Trp Thr Tyr Gly  
 995 1000 1005

Leu Asn	Glu Asp Ser Asp	Met	Leu Arg Ser Pro His	Leu Val Pro
1010		1015		1020
Tyr Cys	Lys Val Asp Glu Ala	Ile Lys Lys Ala Asn	Arg Asp Thr	
1025		1030		1035
Ala Ser	Glu Thr Val Arg Thr	Leu Leu Val Tyr Gly	Tyr Asn Leu	
1040		1045		1050
Asp Pro	Pro Thr Gly Glu Ala	His Glu Ala Leu Leu	Ala Glu Ala	
1055		1060		1065
Ser Arg	Leu Arg Gln Thr His	Phe Arg Thr Tyr Arg	Ala Glu Lys	
1070		1075		1080
Asn Tyr	Ala Val Thr Thr Gly	Lys Trp Tyr Phe Glu	Phe Glu Ile	
1085		1090		1095
Leu Thr	Ala Gly Pro Met Arg	Val Gly Trp Ala Arg	Ser Asp Cys	
1100		1105		1110
Pro Pro	Gly Ser Gln Leu Gly	Asn Asp Glu Tyr Ser	Trp Ala Phe	
1115		1120		1125
Asp Gly	Phe Asn Glu Glu Lys	Val Tyr Leu Gly Thr	Gly Glu Ser	
1130		1135		1140
Phe Gly	Arg Gln Trp Gln Val	Gly Asp Val Val Gly	Val Phe Leu	
1145		1150		1155
Asp Leu	Leu Asp His Thr Met	Ser Phe Ser Leu Asn	Gly Glu Leu	
1160		1165		1170
Leu Met	Asp Ala Leu Gly Gly	Glu Thr Ser Phe Ala	Asp Val Gln	
1175		1180		1185
Gly Glu	Ser Phe Val Pro Ala	Phe Thr Leu Gly Val	Gly Gln Lys	
1190		1195		1200
Ala Lys	Leu Thr Phe Gly Gln	Asp Val Thr Val Leu	Lys Phe Phe	
1205		1210		1215
Thr Thr	Cys Gly Leu Gln Glu	Gly Tyr Glu Pro Phe	Cys Val Asn	
1220		1225		1230
Met Asn	Arg Ala Val Thr Tyr	Trp Tyr Thr Lys Asp	His Pro Ile	
1235		1240		1245
Phe Glu	Asn Thr Glu Asp Tyr	Ala Asp Ser Arg Ile	Asp Val Thr	
1250		1255		1260
Arg Ile	Pro Ala Gly Ser Asp	Thr Pro Pro Cys Leu	Lys Ile Ser	
1265		1270		1275
His Asn	Leu Phe Glu Ser Met	Glu Lys Ala Asn Trp	Glu Phe Leu	
1280		1285		1290
Arg Leu	Ser Leu Pro Val Ile	Cys His Ser Ser Phe	Ile Glu Glu	
1295		1300		1305

Ser Glu	Lys Leu	Lys Arg	Trp	Gln Glu	Ile Arg	Ile	Arg Gln	His	
1310			1315			1320			
Arg Leu	Leu Val	Glu Ala	Asp	Gln Thr	Thr Pro	Ala	His Met	Glu	
1325			1330			1335			
Gln Ile	Met Lys	Ser Gly	Leu	Ser Met	Ser Asp	Ile	Lys Gly	Leu	
1340			1345			1350			
His Arg	Gly Tyr	Ser Glu	Asp	Ala Val	Glu Ala	Asp	Glu Met	Met	
1355			1360			1365			
Met Gln	Ser Thr	Pro Thr	Thr	Lys Ser	Lys Met	Arg	Gln Pro	Ser	
1370			1375			1380			
Arg Pro	Pro Arg	Lys Gly	Ser	Leu Ser	Arg Asn	Glu	Asp Met	Pro	
1385			1390			1395			
Met Ile	Asn Gly	Ser Leu	Glu	Gln Ser	Lys Met	Asn	Arg Ser	Thr	
1400			1405			1410			
Ser Glu	Leu Asp	Leu Asn	Arg	Tyr Asn	Ala Asp	Leu	Gln Asn	Asp	
1415			1420			1425			
Lys Asp	Asp Lys	Lys Lys	Arg	Gly Arg	Ser Pro	Phe	Arg Phe	Phe	
1430			1435			1440			
Ser Arg	Lys Arg	Glu Ala	Ser	Asn Glu	Arg Ser	Lys	Lys Ala	Lys	
1445			1450			1455			
Ser Pro	Glu Pro	Asn Ser	Met	Met Glu	Ala Asp	Arg	Gly Gln	Met	
1460			1465			1470			
Gly Arg	Ser Gln	His His	Met	Met Arg	Thr Pro	Thr	Val Lys	Val	
1475			1480			1485			
Thr Ala	Pro Asp	Met Lys	Val	Ile Pro	Pro Thr	Ile	Pro Glu	Arg	
1490			1495			1500			
Ser Asn	Met Pro	Lys Gln	Met	Thr Gly	Ala Pro	Leu	Ser Gly	Ser	
1505			1510			1515			
Gly Ile	Glu Ser	Val Gly	Asn	Glu Ile	Phe Asp	Gly	Glu Cys	Leu	
1520			1525			1530			
Lys Leu	Ile Asn	Glu Tyr	Phe	Tyr Gly	Val Arg	Ile	Phe Pro	Gly	
1535			1540			1545			
Gln Asp	Pro Thr	His Val	Tyr	Val Gly	Trp Val	Thr	Thr Gln	Tyr	
1550			1555			1560			
His Phe	Phe Ala	Asn Glu	Phe	Asn Gln	Ser Lys	Val	Arg Lys	Val	
1565			1570			1575			
Thr Val	His Thr	Leu Asp	Glu	Phe Ser	Arg Val	Asn	Glu Ser	Val	
1580			1585			1590			
Asp Arg	Gln Ser	Cys Tyr	Met	Val Arg	Ser Asp	Glu	Leu Phe	Asn	
1595			1600			1605			

Glu Val	Thr Asn Asp Ser Ser	Gly Lys Gly Ala Ser	Gln Gly Met
1610	1615	1620	
Phe Ile	Gly Cys Phe Val Asp	Ala Ala Thr Gly Tyr	Ile Ser Phe
1625	1630	1635	
Thr Cys	Glu Gly Lys Glu Thr	Ser His Lys Phe Lys	Met Glu Pro
1640	1645	1650	
Glu Thr	Lys Leu Phe Pro Ala	Ile Phe Val Glu Ala	Thr Ser Lys
1655	1660	1665	
Glu Ile	Leu Gln Ile Glu Leu	Gly Arg Thr Ser Thr	Thr Leu Pro
1670	1675	1680	
Leu Ser	Ala Ala Val Leu Gln	Asn Ser Glu Arg His	Val Asn Pro
1685	1690	1695	
Gln Phe	Pro Pro Arg Leu Lys	Val Gln Cys Leu Lys	Pro His Gln
1700	1705	1710	
Trp Ala	Arg Val Pro Asn Val	Ser Leu Gln Val His	Ala Leu Lys
1715	1720	1725	
Leu Ser	Asp Ile Arg Gly Trp	Ser Met Leu Cys Glu	Asp Pro Met
1730	1735	1740	
Ser Met	Leu Ala Leu His Ile	Pro Glu Glu Asp Arg	Ser Ile Asp
1745	1750	1755	
Ile Leu	Glu Leu Ile Glu Met	Glu Lys Leu Leu Ser	Phe His Ala
1760	1765	1770	
His Thr	Leu Thr Leu Tyr Ala	Ala Leu Cys Phe Gln	Ser Asn Tyr
1775	1780	1785	
Arg Ala	Ala His Thr Leu Cys	Ser His Val Asp Glu	Lys Gln Leu
1790	1795	1800	
Leu Tyr	Ala Ile Arg Ser Asp	Tyr Met Ser Gly Pro	Leu Arg Gln
1805	1810	1815	
Gly Phe	Tyr Asp Leu Leu Ile	Ala Leu His Leu Glu	Ser His Ala
1820	1825	1830	
Tyr Thr	Met Glu Val Cys Lys	Asn Glu Phe Ile Ile	Pro Ile Gly
1835	1840	1845	
Gln Glu	Leu Lys Asp Val Tyr	Glu Asp Pro Glu Met	Cys His Ser
1850	1855	1860	
Leu Arg	Ser Leu Lys Thr Glu	Ser Val Leu Pro Thr	Met Lys Met
1865	1870	1875	
Thr Asp	Lys Ala Asp Glu Pro	Ser Pro Ser Glu Val	Val Asp Asn
1880	1885	1890	
Ile Arg	Ser Leu Tyr Ser Pro	Gln Phe Pro Leu Asp	Val Val Arg
1895	1900	1905	

Asp Phe	Val Met	Ala Ala	Leu	Asp Glu	Ala Val	Gln	Ile Asn	Gln
1910			1915			1920		
Leu His	Asn Arg	Asp Pro	Val	Gly Gly	Ser Asn	Glu	Asn Tyr	Phe
1925			1930			1935		
Leu Pro	Leu Leu	Lys Leu	Val	Asp Arg	Leu Leu	Leu	Val Gly	Met
1940			1945			1950		
Leu Arg	Asp Gly	Asp Val	Met	Lys Leu	Leu Ile	Met	Phe Ser	Pro
1955			1960			1965		
Glu Thr	Trp Asp	Thr Ala	Phe	Glu Lys	Asp Gly	Lys	Asp Glu	His
1970			1975			1980		
Arg Lys	Gly Leu	Leu Thr	Met	Lys Met	Ala Glu	Gly	Ala Lys	Leu
1985			1990			1995		
Gln Met	Cys Tyr	Leu Leu	His	His Leu	Tyr Asp	Ile	Gln Leu	Arg
2000			2005			2010		
His Arg	Val Glu	Ala Ile	Ile	Ser Phe	Ser Val	Asp	Phe Val	Gly
2015			2020			2025		
Asp Leu	Gln Ser	Asp Gln	Leu	Arg Arg	Tyr Ile	Glu	Ile Lys	Gln
2030			2035			2040		
Ser Asp	Leu Pro	Ser Ala	Ile	Ala Ala	Lys Lys	Thr	Arg Glu	Phe
2045			2050			2055		
Arg Cys	Pro Pro	Arg Glu	Gln	Met Asn	Ala Ile	Leu	Gly Phe	Lys
2060			2065			2070		
Asn Leu	Glu Glu	Gly Asp	Ile	Glu Asn	Cys Pro	Cys	Gly Asp	Glu
2075			2080			2085		
Leu Arg	Glu Arg	Leu Asn	Ser	Phe His	Glu Lys	Leu	Met His	Lys
2090			2095			2100		
Val Ser	Leu Leu	Ala Leu	Gln	Glu Pro	Ser Glu	Glu	Glu Ala	Ser
2105			2110			2115		
Ala Glu	Glu Val	Lys Lys	Pro	Asn Ala	Leu Asn	Arg	Leu Tyr	Asn
2120			2125			2130		
Phe Ile	Asn Ala	Val Lys	Glu	Leu Glu	Glu Thr	Pro	Gln Ile	Glu
2135			2140			2145		
Glu Glu	Pro Glu	Lys Lys	Thr	Pro Glu	Glu Ile	Phe	Arg Lys	Val
2150			2155			2160		
Leu Ile	Ser Thr	Ile Val	Lys	Trp Ala	Glu Glu	Thr	Gln Ile	Glu
2165			2170			2175		
Ser Pro	Lys Leu	Val Arg	Glu	Met Phe	Ser Leu	Leu	Val Arg	Gln
2180			2185			2190		
Tyr Asp	Thr Val	Gly Glu	Leu	Ile Arg	Ala Leu	Gly	Lys Thr	Tyr
2195			2200			2205		

Val	Ile	Asn	Ser	Lys	Thr	Lys	Asp	Asp	Ala	Ala	Leu	Met	Trp	Val
2210						2215					2220			
Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln
2225						2230					2235			
Glu	Glu	Glu	Gly	Leu	Met	Arg	Glu	Arg	Leu	Trp	Lys	Leu	Val	Asn
2240						2245					2250			
Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Val	Leu	Arg
2255						2260					2265			
Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly	Arg
2270						2275					2280			
Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Gln	Ala	Gly	Gln	Glu	Gly
2285						2290					2295			
Glu	Pro	Val	Ala	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val	Val
2300						2305					2310			
Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Ser	Arg	Gln
2315						2320					2325			
Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Ala	Phe	Leu	Leu	Glu	Asn
2330						2335					2340			
Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr	Pro
2345						2350					2355			
Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu	Ala
2360						2365					2370			
Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Ile	Tyr	Leu
2375						2380					2385			
Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Ile	Glu	Lys	Gly
2390						2395					2400			
Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg	Tyr	Leu
2405						2410					2415			
Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val	Glu
2420						2425					2430			
Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro	Gly
2435						2440					2445			
Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Leu	Arg
2450						2455					2460			
Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile	Ala	Asp	Arg
2465						2470					2475			
Arg	Lys	Val	Met	Asp	Glu	Pro	Glu	Gly	Thr	Thr	Met	Val	Met	His
2480						2485					2490			
Phe	Glu	His	Pro	Leu	Pro	Glu	Ser	Asp	Asp	Asp	Glu	Asp	Tyr	Ile
2495						2500					2505			

Asp Thr	Gly Ala Ala Ile Leu	Ala Phe Tyr Cys Thr	Leu Val Asp
2510	2515	2520	
Leu Leu	Gly Arg Cys Ala Pro	Asp Ser Ser Val Ile	Ala Gln Gly
2525	2530	2535	
Lys Asn	Glu Ser Leu Arg Ala	Arg Ala Ile Leu Arg	Ser Leu Val
2540	2545	2550	
Pro Leu	Glu Asp Leu Gln Gly	Val Leu Ser Leu Lys	Phe Thr Leu
2555	2560	2565	
Gln Asn	Pro Ala Ala Gly Glu	Glu Arg Pro Lys Ser	Asp Met Pro
2570	2575	2580	
Ser Gly	Leu Ile Pro Gly His	Lys Gln Ser Val Val	Leu Phe Leu
2585	2590	2595	
Glu Arg	Val Tyr Gly Ile Glu	Thr Gln Glu Leu Phe	Phe Arg Leu
2600	2605	2610	
Leu Glu	Glu Ala Phe Leu Pro	Asp Leu Arg Ala Ala	Thr Met Leu
2615	2620	2625	
Asp Arg	Asn Asp Gly Ser Glu	Ser Asp Met Ala Leu	Ala Met Asn
2630	2635	2640	
Arg Tyr	Ile Gly Asn Ser Ile	Leu Pro Leu Leu Ile	Thr His Ser
2645	2650	2655	
Lys Phe	Tyr Asn Glu Ala Asp	Asn Tyr Ala Ser Leu	Leu Asp Ala
2660	2665	2670	
Thr Leu	His Thr Val Tyr Arg	Leu Ser Lys Asn Arg	Met Leu Thr
2675	2680	2685	
Lys Gly	Gln Arg Glu Ala Val	Ser Asp Phe Leu Val	Ala Leu Thr
2690	2695	2700	
Ser Ser	Met Gln Pro Ser Met	Leu Leu Lys Leu Leu	Arg Lys Leu
2705	2710	2715	
Thr Val	Asp Val Ser Lys Leu	Thr Glu Tyr Thr Thr	Val Ala Leu
2720	2725	2730	
Arg Leu	Leu Thr Leu His Tyr	Asp Arg Cys Ala Lys	Tyr Tyr Gly
2735	2740	2745	
Ser Thr	Gly Gly Gln Gly Leu	Tyr Gly Ser Ser Ser	Asp Glu Glu
2750	2755	2760	
Lys Arg	Leu Thr Met Met Leu	Phe Ser Asn Ile Phe	Asp Ser Leu
2765	2770	2775	
Ser Lys	Met Asp Tyr Asp Pro	Glu Leu Phe Gly Lys	Ala Leu Pro
2780	2785	2790	
Cys Leu	Thr Ala Ile Gly Cys	Ala Leu Pro Pro Asp	Tyr Ser Leu
2795	2800	2805	



Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Leu	Tyr	Gly	Ala	Arg	Asp	Ser	Gln
2810						2815					2820			
Ala	Gly	Pro	Ser	Asp	Gly	Pro	Tyr	Asn	Pro	Gln	Pro	Ile	Asn	Thr
2825						2830					2835			
His	Ser	Val	Val	Leu	Asn	Asn	Asp	Leu	Asn	Thr	Ile	Val	Gln	Lys
2840						2845					2850			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys	Leu	Glu
2855						2860					2865			
Asn	Gly	Trp	Thr	Tyr	Gly	Asp	Gln	Trp	Ser	Asp	Ser	Gln	Lys	Thr
2870						2875					2880			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr	Val	Glu
2885						2890					2895			
Pro	Ser	Ile	Glu	Arg	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser
2900						2905					2910			
Ile	Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu
2915						2920					2925			
Ala	Asp	Val	Pro	Leu	Thr	Ser	Arg	Gly	Ser	Ile	Arg	Arg	Gln	Ser
2930						2935					2940			
Lys	Pro	Asn	Ala	Met	Val	Asp	Ser	Ser	Thr	Pro	Phe	Asn	Tyr	His
2945						2950					2955			
Pro	Asn	Pro	Ile	Asp	Met	Thr	Asn	Leu	Thr	Leu	Gly	Arg	Glu	Met
2960						2965					2970			
Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ala	His	Asp	Ile	Trp
2975						2980					2985			
Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Ile	Thr	Cys	Gly	Gly	Gly	Ile
2990						2995					3000			
His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys
3005						3010					3015			
Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Leu	Gln
3020						3025					3030			
Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Arg	Thr	Gly	Gly	Pro
3035						3040					3045			
Ser	Glu	Ser	Glu	Gln	Leu	Ala	Ala	Gln	Ala	Thr	Gly	Glu	Leu	Arg
3050						3055					3060			
Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp	Arg
3065						3070					3075			
Ala	Ser	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser
3080						3085					3090			
Arg	Arg	Ser	Ser	Phe	Lys	Thr	Cys	Thr	Arg	Asp	Ile	Lys	Phe	Phe
3095						3100					3105			

Ser	Lys	Val	Val	Leu	Pro	Leu	Val	Glu	Lys	Tyr	Phe	Ser	Thr	His
3110						3115					3120			
Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Ser	Asn	Asn	Ile	Gly
3125						3130					3135			
Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ser	Leu	Phe	Cys
3140						3145					3150			
Lys	Leu	Ala	Asn	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly	Ala
3155						3160					3165			
Asp	Val	Arg	Ile	Ser	Val	Lys	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly
3170						3175					3180			
Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg
3185						3190					3195			
Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Thr	Ala	Asp	Asp	Leu	Gly
3200						3205					3210			
His	Thr	Ile	Gln	Asn	Leu	Gln	Glu	Gly	Lys	Tyr	Ser	His	Leu	Arg
3215						3220					3225			
Gly	Ala	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Phe	Tyr	Ile	Asn	Asp
3230						3235					3240			
Val	Ile	Leu	Pro	Val	Leu	Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala
3245						3250					3255			
Cys	Glu	Tyr	Gly	Ser	Asp	Leu	Val	Leu	Asp	Glu	Ile	Gln	Val	Ala
3260						3265					3270			
Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Thr	Leu	Gly	Ile	Asp	Val
3275						3280					3285			
Thr	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Asp	Arg
3290						3295					3300			
His	Arg	Pro	Gln	Leu	Gly	Arg	Cys	Leu	Gly	Ala	Tyr	Ala	Ser	Thr
3305						3310					3315			
Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln
3320						3325					3330			
Phe	Ser	Leu	Val	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln
3335						3340					3345			
Asp	Ile	Leu	Ser	Arg	Met	Glu	Ser	Thr	Met	Pro	Thr	Leu	Asp	Asn
3350						3355					3360			
Ile	Leu	Ser	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	His
3365						3370					3375			
Asn	Asp	Ala	Pro	His	Ile	Ile	Asp	Val	Ile	Met	Pro	Met	Leu	Cys
3380						3385					3390			
Ser	Tyr	Leu	Pro	Val	Trp	Trp	Asn	Gln	Gly	Pro	Asp	Asn	Val	Ala
3395						3400					3405			

Leu Thr	Ala Gly Asn Tyr Val	Thr Thr Val Thr Ser	Glu His Met
3410	3415	3420	
Asn Gln	Leu Leu Lys Asn Val	Leu Lys Met Ile Lys	Lys Asn Ile
3425	3430	3435	
Gly Asn	Glu Ser Ala Pro Trp	Met Thr Arg Ile Ala	Ala Tyr Thr
3440	3445	3450	
Gln Gln	Ile Ile Ile Asn Ser	Ser Glu Glu Leu Leu	Lys Asp Pro
3455	3460	3465	
Phe Leu	Pro Leu Ala Glu Arg	Val Lys Lys Arg Thr	Asp Ala Met
3470	3475	3480	
Phe His	Lys Glu Glu Ser Leu	Arg Gly Phe Ile Lys	Ser Ala Ser
3485	3490	3495	
Asp Asp	Thr Ser Gln Ile Glu	Ala Gln Ile Gln Glu	Asp Trp Gln
3500	3505	3510	
Leu Leu	Val Arg Asp Ile Tyr	Ser Phe Tyr Pro Leu	Leu Ile Lys
3515	3520	3525	
Tyr Val	Asp Leu Gln Arg Asn	His Trp Leu Arg Asn	Asn Ile Ser
3530	3535	3540	
Glu Ala	Glu Asp Leu Tyr Asn	His Val Ala Glu Ile	Phe Asn Thr
3545	3550	3555	
Trp Ser	Lys Ser Gln Tyr Phe	Leu Lys Glu Glu Gln	Asn Phe Ile
3560	3565	3570	
Ser Ala	Asn Glu Ile Asp Asn	Met Val Leu Ile Met	Pro Thr Ala
3575	3580	3585	
Thr Arg	Arg Ser Ala Val Val	Ser Asp Ser Ala Ala	Pro Pro Gly
3590	3595	3600	
Gly Ser	Gly Lys Lys Lys Lys	Lys Asn Arg Glu Lys	Lys Arg Asp
3605	3610	3615	
Lys Asp	Lys Glu Leu Gln Ala	Ser Leu Met Val Ala	Cys Leu Lys
3620	3625	3630	
Arg Leu	Leu Pro Val Gly Leu	Asn Leu Phe Ala Gly	Arg Glu Gln
3635	3640	3645	
Glu Leu	Val Gln His Cys Lys	Asp Arg Phe Leu Lys	Lys Met Gln
3650	3655	3660	
Asp Tyr	Glu Ile Val Glu Phe	Ala Lys Ile Gln Leu	Thr Leu Pro
3665	3670	3675	
Asp Lys	Leu Asp Pro Gly Asp	Glu Met Ser Trp Gln	His Tyr Leu
3680	3685	3690	
Tyr Ser	Thr Leu Gly Ser Lys	Lys Glu Ile Thr Glu	Gly Gly Lys
3695	3700	3705	

Pro	Glu	Gln	Ile	Asp	Ala	Val	Val	Asp	Arg	Ile	Val	Ala	Met	Ala
3710						3715					3720			
Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His	Pro	Gln	Leu	Gln
3725						3730					3735			
Ser	Lys	Ala	Ser	Tyr	Arg	Ser	Val	Val	Ser	Thr	Gln	Arg	Lys	Arg
3740						3745					3750			
Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Leu	Ser	Leu	His	Ala	Leu	Pro
3755						3760					3765			
Arg	His	Lys	Ala	Ile	Asn	Ile	Phe	Ala	Arg	Ser	Tyr	Tyr	Glu	Leu
3770						3775					3780			
Trp	Leu	Thr	Glu	Glu	Asn	Val	Gly	Thr	Glu	Val	Leu	Ile	Glu	Asp
3785						3790					3795			
Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	Leu	Lys	Lys	Thr	Asp	Glu
3800						3805					3810			
Glu	Val	Asp	Glu	Gly	Lys	Ser	Asp	Pro	Leu	Thr	Gln	Leu	Val	Thr
3815						3820					3825			
Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	Gly	Ala	Leu	Gln
3830						3835					3840			
Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	Glu	Ile	Ala	Ala	Lys	Ser
3845						3850					3855			
Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly	Asp	Glu	Glu	Glu	Gly	Gly
3860						3865					3870			
Glu	Gly	Glu	Glu	Gln	Gly	Ala	Ser	Ile	His	Glu	Gln	Glu	Met	Glu
3875						3880					3885			
Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ser	Arg	Leu	Ala	Asn	Arg	Gly
3890						3895					3900			
Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile	Ser	Ala	Cys	Asn	Gly	Val
3905						3910					3915			
Pro	Ser	Asp	Met	Val	Glu	Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile
3920						3925					3930			
Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His
3935						3940					3945			
Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly
3950						3955					3960			
Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg
3965						3970					3975			
Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val	Gly	Ser	Asp	Gly	Ala	Ala
3980						3985					3990			
Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Thr	Leu	Phe
3995						4000					4005			

Arg Phe	Ile Gln Leu Thr	Cys	Glu Gly His Asn Leu	Glu Trp Gln
4010		4015		4020
Asn Tyr	Leu Arg Thr Gln	Ala	Gly Asn Thr Thr	Thr Val Asn Val
4025		4030		4035
Val Ile	Cys Thr Val Asp	Tyr	Leu Leu Arg Leu	Gln Glu Ser Ile
4040		4045		4050
Met Asp	Phe Tyr Trp His	Tyr	Ser Ser Lys Glu	Leu Ile Asp Pro
4055		4060		4065
Ala Gly	Lys Ala Asn Phe	Phe	Lys Ala Ile Gly	Val Ala Ser Gln
4070		4075		4080
Val Phe	Asn Thr Leu Ser	Glu	Val Ile Gln Gly	Ala Cys Thr Gln
4085		4090		4095
Asn Gln	Gln Ala Leu Ala	His	Ser Lys Leu Trp	Asp Ala Val Gly
4100		4105		4110
Gly Phe	Leu Phe Leu Phe	Ser	His Met Gln Asp	Lys Leu Ser Lys
4115		4120		4125
His Ser	Ser Gln Val Asp	Leu	Leu Lys Glu Leu	Leu Asn Leu Gln
4130		4135		4140
Lys Asp	Met Ile Thr Met	Met	Leu Ser Met Leu	Glu Gly Asn Val
4145		4150		4155
Val Asn	Gly Thr Ile Gly	Lys	Gln Met Val Asp	Thr Leu Val Glu
4160		4165		4170
Ser Ala	Ser Asn Val Glu	Leu	Ile Leu Lys Tyr	Phe Asp Met Phe
4175		4180		4185
Leu Lys	Leu Lys Asp Met	Thr	Glu Ala Pro Ser	Phe Leu Glu Ile
4190		4195		4200
Asp Pro	Asn His Asp Gly	Trp	Val Leu Pro Lys	Asp Phe Lys Glu
4205		4210		4215
Lys Met	Glu Gln Gln Lys	Ser	Tyr Thr Thr Glu	Glu Ile Ser Phe
4220		4225		4230
Met Leu	Gln Cys Cys Glu	Thr	Asn His Asp Gly	Lys Val Asp Tyr
4235		4240		4245
Ile Gly	Phe Val Asp Arg	Phe	His Glu Pro Ser	Lys Glu Ile Gly
4250		4255		4260
Phe Asn	Leu Ala Val Leu	Leu	Thr Asn Leu Ser	Glu His Met Pro
4265		4270		4275
Asn Glu	Pro Arg Leu Ala	Arg	Phe Leu Glu Thr	Ala Gly Ser Val
4280		4285		4290
Leu Asn	Tyr Phe Glu Pro	Phe	Leu Gly Arg Ile	Glu Ile Met Gly
4295		4300		4305

Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser
4310						4315					4320			
Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg
4325						4330					4335			
Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys
4340						4345					4350			
Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met
4355						4360					4365			
Thr	His	Ala	Ser	Gly	Leu	Met	Ser	Val	Asp	Asp	Asp	Ser	Gly	Gly
4370						4375					4380			
Gly	Gly	Gly	Lys	Ala	Ala	Tyr	Thr	Tyr	Ile	Ser	Glu	Glu	Asp	Glu
4385						4390					4395			
Glu	Lys	Asn	Ala	Lys	Asp	Pro	Ile	Arg	Arg	Thr	Ile	Gln	Ala	Phe
4400						4405					4410			
Lys	Asp	Ala	Ile	Tyr	Phe	Ile	Leu	Thr	Met	Leu	Ser	Pro	Ser	Asn
4415						4420					4425			
Ile	Lys	Thr	Lys	Ile	Asn	Glu	Met	Gln	Gln	Met	Ser	Val	Pro	Glu
4430						4435					4440			
Leu	Val	Val	Gly	Phe	Phe	Lys	Ile	Phe	Phe	Tyr	Met	Phe	Tyr	Tyr
4445						4450					4455			
Ser	Gly	Phe	Ser	Val	Ser	Val	Val	Leu	Arg	Tyr	Phe	Gly	Arg	Ile
4460						4465					4470			
Leu	Met	Thr	Leu	Met	Arg	Gly	Pro	Gln	Thr	Glu	Glu	Pro	Val	Ala
4475						4480					4485			
Glu	Val	Lys	Lys	Glu	Asp	Glu	Ile	Met	Gly	Pro	Ile	Arg	Ala	Leu
4490						4495					4500			
Pro	Pro	Pro	Pro	Pro	Asp	Asn	Lys	Glu	Ala	Ser	Ser	Ser	Ser	Ala
4505						4510					4515			
Lys	Asp	Asp	Ser	Gly	Gln	Ala	Lys	Pro	Ala	Asp	Gly	Gly	Ala	Thr
4520						4525					4530			
Leu	Ala	Leu	Thr	Ala	Ser	Gly	Glu	Glu	His	Lys	Glu	Gly	Gly	Ala
4535						4540					4545			
Thr	Glu	Glu	Gly	Ala	Glu	Asp	Gly	Ala	Lys	Pro	Glu	Gly	Ala	Glu
4550						4555					4560			
Thr	Thr	Glu	Gly	Thr	Thr	Met	Thr	Leu	Ala	Asp	Leu	Leu	Gly	Gly
4565						4570					4575			
Glu	Ala	Ala	Arg	Lys	Glu	Ala	Val	Ala	Arg	Ala	Glu	Val	Ala	Ala
4580						4585					4590			
Glu	Gln	Gln	Ala	Val	Met	Ala	Ala	Val	Glu	Ala	Glu	Ala	Lys	His
4595						4600					4605			

Glu Val	Val Ser Glu Pro Ser	Ala Phe Ser Gln Ile	Asp Phe Asn
4610	4615	4620	
Arg Tyr	Thr His Arg Ala Val	Ser Phe Leu Ala Arg	Asn Phe Tyr
4625	4630	4635	
Asn Leu	Lys Tyr Val Ala Leu	Val Leu Ala Phe Cys	Ile Asn Phe
4640	4645	4650	
Ile Leu	Leu Phe Tyr Lys Val	Thr Thr Leu Gly Glu	Asp Glu Asp
4655	4660	4665	
Asp Gly	Gly Ser Gly Glu Leu	Gly Gly Gly Leu Ala	Glu Asp Leu
4670	4675	4680	
Leu Glu	Glu Leu Gly Gly Gly	Ser Gly Glu Glu Gly	Gly Gly Leu
4685	4690	4695	
Ser Gly	Gly Ile Ser Gly Gly	Glu Ser Gly Glu Asp	Gly Ser Gly
4700	4705	4710	
Glu Glu	Glu Asp Pro Ile Glu	Leu Val His Val Asn	Glu Asp Phe
4715	4720	4725	
Phe Tyr	Met Ala His Val Met	Lys Ile Ala Ala Met	Leu His Ser
4730	4735	4740	
Leu Val	Ser Leu Ala Met Leu	Ile Ala Tyr Tyr His	Leu Lys Val
4745	4750	4755	
Pro Leu	Ala Ile Phe Lys Arg	Glu Lys Glu Ile Ala	Arg Arg Leu
4760	4765	4770	
Glu Phe	Asp Gly Leu Tyr Ile	Ala Glu Gln Pro Glu	Asp Asp Asp
4775	4780	4785	
Ile Lys	Ser His Trp Asp Lys	Leu Val Ile Ser Ala	Lys Ser Phe
4790	4795	4800	
Pro Val	Asn Tyr Trp Asp Lys	Phe Val Lys Lys Lys	Val Arg Gln
4805	4810	4815	
Lys Tyr	Ser Glu Thr Tyr Asp	Phe Asp Ser Ile Ser	Thr Leu Leu
4820	4825	4830	
Gly Met	Glu Lys Thr Ser Phe	Ser Ser Gln Glu Thr	Glu Glu Gly
4835	4840	4845	
Thr Gly	Ile Ile Asn Phe Ile	Leu Asn Ile Asp Trp	Arg Tyr Gln
4850	4855	4860	
Val Trp	Lys Ala Gly Val Thr	Ile Thr Asp Asn Ala	Phe Leu Tyr
4865	4870	4875	
Ser Leu	Trp Tyr Phe Ile Phe	Ser Ile Leu Gly Asn	Phe Asn Asn
4880	4885	4890	
Phe Phe	Phe Ala Ala His Leu	Leu Asp Val Ala Val	Gly Phe Lys
4895	4900	4905	

Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln
4910						4915					4920			
Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr
4925						4930					4935			
Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Val	Gln	Glu
4940						4945					4950			
Glu	Asp	Glu	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys
4955						4960					4965			
Phe	Val	Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Ser	Gly	Ile
4970						4975					4980			
Gly	Asp	Glu	Ile	Glu	Pro	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr
4985						4990					4995			
Arg	Ile	Met	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Val	Ile
5000						5005					5010			
Leu	Leu	Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu
5015						5020					5025			
Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	Glu	Asp	Met	Glu	Ser	Asn
5030						5035					5040			
Cys	Phe	Ile	Cys	Gly	Ile	Gly	Lys	Asp	Tyr	Phe	Asp	Lys	Val	Pro
5045						5050					5055			
His	Gly	Phe	Asp	Thr	His	Val	Gln	Gln	Glu	His	Asn	Leu	Ala	Asn
5060						5065					5070			
Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu
5075						5080					5085			
Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr	Gln	Gln	Arg
5090						5095					5100			
Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr
5105						5110					5115			
Glu	Asp	Glu	Leu	Gly	Gly	Gly	Gly	Gly						
5120						5125								

<210> 9  
 <211> 16363  
 <212> DNA  
 <213> *Drosophila melanogaster*

<220>  
 <221> misc\_feature  
 <222> (15890)..(15890)  
 <223> n = a, c, g, or t

<220>  
 <221> CDS  
 <222> (1)..(15327)  
 <223>



<400> 9

atg gct gag gcg gag gga ggc tcc gag cag gat gat gtt tca ttc ctg	48
Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu	
1 5 10 15	
aga acg gag gac atg gtc acg ctc tcc tgc acg gcg acg ggg gag cgt	96
Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg	
20 25 30	
gtc tgc ttg gcc gcc gaa gga ttt ggc aac cgg cac tgc ttt ctc gag	144
Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu	
35 40 45	
aat att gcc gac aag aac gtg ccg ccg gat ctt tcg cag tgt gtc ttc	192
Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe	
50 55 60	
gtc atc gag cag gcg ctg tcc gtg cga gca ttg cag gag ttg gtg acg	240
Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr	
65 70 75 80	
gcg gca gga tcc gag act ggc aaa ggc acc gga tcg gga cac agg aca	288
Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr	
85 90 95	
ttg ctc tat ggc aat gcc att ttg ctg cgt cac cac aac agt gat atg	336
Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met	
100 105 110	
tac ttg gca tgt ctg tcc acc tcc tcg tcg aac gac aag ctg tcc ttc	384
Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe	
115 120 125	
gac gtg ggc ctg cag gag cac agc cag gga gag gct tgt tgg tgg acg	432
Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr	
130 135 140	
gtt cat ccg gcg agc aag cag cgc tct gag ggc gag aag gtg cgc gtc	480
Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val	
145 150 155 160	
gga gat ggt ctg atc ccg gtg tcc gtg gcc acc gaa cgt tat ttg cat	528
Gly Asp Gly Leu Ile Pro Val Ser Val Ala Thr Glu Arg Tyr Leu His	
165 170 175	
acg acc aag gag aac gaa cag tct att gta aat gcc agc ttc cat gtg	576
Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val	
180 185 190	
acc cac tgg tcc gtg cag ccc tac ggc acg ggc atc tct agg atg aag	624
Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys	
195 200 205	
tac gtg ggc tat gtc ttt ggc ggc gat gtg ctg cgt ttc ttc cat ggt	672
Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly	
210 215 220	
ggc gac gag tgc ctg acc ata ccg agt aca tgg ggt cgt gag gcg gga	720
Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly	

225	230	235	240	
caa aat att gtt att tac gag ggc ggc gtg gtc atg gca cag gcg agg				768
Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg				
	245	250	255	
tcc ctg tgg cgc ctg gaa ctc gct cga acc aag tgg gct ggt ggc ttt				816
Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly Phe				
	260	265	270	
atc aac tgg tac cac ccg atg cgc ata cgc cac ata acc act gga cgc				864
Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg				
	275	280	285	
tac ttg ggc gtc aac gac agc aac gaa ctg att cta gtt aag aag gag				912
Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu				
	290	295	300	
gag gct tcg att gcc acg acg act ttc tgc ctg cgg cag gaa aag gac				960
Glu Ala Ser Ile Ala Thr Thr Thr Phe Cys Leu Arg Gln Glu Lys Asp				
	305	310	315	320
gac gag aaa aag gtg ctg gag gac aag gac ctg gag gtg atc ggc tcg				1008
Asp Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser				
	325	330	335	
ccg atc atc aag tac ggc gac act acc gtc atc gtc cag cac tgc gag				1056
Pro Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu				
	340	345	350	
act agc ttg tgg ctc agc tac aag agt tat gag acg aaa aag aag ggc				1104
Thr Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly				
	355	360	365	
gta gga aag gtg gag gag aag caa gcg atc ctg cac gag gag ggc aag				1152
Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys				
	370	375	380	
atg gac gat tgt ctc gac ttc tcg cgc tcc cag gag gag gag tcc aag				1200
Met Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys				
	385	390	395	400
acg gct cgt gtc atc cgc aag tgc agc agc ctc ttc acc cag ttt att				1248
Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile				
	405	410	415	
aca gcc ttg gaa aca ctg cag tca aat cgc cga cac tcc att ttc ttc				1296
Thr Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe				
	420	425	430	
caa aag gtc aac ctc aac gag atg gtc atg tgc ctt gag gac ttg att				1344
Gln Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile				
	435	440	445	
aac tac ttt tcg caa ccc gaa gac gat atg gag cac gag gag aaa cag				1392
Asn Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln				
	450	455	460	
aac cga ttc cgt gcc ctg cgc aac cga cag gat ctg ttc cag gag gag				1440
Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu				

465	470	475	480	
ggc gtg ctc aat ctg atc ctg gag gcc att gac aag gtc aac ata atc				1488
Gly Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Val Asn Ile Ile				
	485	490	495	
acc tcg cag ggc ttc cta gcc agc ttc ctg gcc ggc gac gag acc ggc				1536
Thr Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly				
	500	505	510	
cag agc tgg gat ctc atc tcc acc tat ttg tac caa ctc ttg gcc gcc				1584
Gln Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala				
	515	520	525	
atc atc aag ggc aac cac acg aac tgc gcc cag ttc gcg aac agt aac				1632
Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn				
	530	535	540	
cga ctc aac tgg cta ttc tcc cgc ctc ggt tcc cag gcc tcc agc gag				1680
Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu				
	545	550	555	560
ggt tcc ggc atg ttg gac gta ctt cac tgc gtg ctg atc gat tcg cca				1728
Gly Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro				
	565	570	575	
gag gca cta aac atg atg cgg gat gag cac atc aag gtg gtc atc tcc				1776
Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Val Ile Ser				
	580	585	590	
ctg ctg gag aag cac ggc agg gac ccg aaa gtc cta gac gtt ctg tgt				1824
Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys				
	595	600	605	
tcc ttg tgc gtg ggt aat gga gtg gcg gtg cga tcc tcc cag aac aac				1872
Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn				
	610	615	620	
att tgc gac ttt ttg cta ccg ggc aag aat ctg ttg cta cag acg ctc				1920
Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu				
	625	630	635	640
ctg gtg gac cat gtg gcc agc atc cga ccg aac atc ttc gtg ggt cgc				1968
Leu Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg				
	645	650	655	
gtg gac ggt tct tcc atg tac cag aag tgg tac ttc gag gtg acc atg				2016
Val Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met				
	660	665	670	
gat cac atc gaa cag acc acg cac atg atg ccc cac ctg cgc att ggc				2064
Asp His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly				
	675	680	685	
tgg gct aat act tcc ggg tat gta ccg tat ccc gga ggc ggc aag aag				2112
Trp Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys				
	690	695	700	
tgg ggt ggc aat gga gta ggc gat gac ctg tac tcc ttt gga ttt gat				2160
Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp				

705	710	715	720	
ggt gcc ttt ctt tgg acg gga ggt cgc aaa aca cta gtg gtg gac gcg				2208
Gly Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala				
	725	730	735	
ctg ccc gag gag ccc ttt atc cgt aaa ggc gat gtt att ggc gtt gcc				2256
Leu Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala				
	740	745	750	
att gac ctt tct gtg ccc atc atc acg ttt act ttt aac gga gta aaa				2304
Ile Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys				
	755	760	765	
gtg cgc ggt agc ttt agg gac ttt aac ctg gac gga atg ttc ttt ccc				2352
Val Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro				
	770	775	780	
gtg atg agt tgc tca tca aaa cta agc tgt cgc ttc ctt ttc gga ggt				2400
Val Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly				
	785	790	800	
gat cat ggt cgt tta aag ttt gcc ccg ccc atg gga ttc tct gcc ctc				2448
Asp His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu				
	805	810	815	
gtg cag tgt ctc atg ccg cag cag atc ctc agt ctg gat cct tgc ttc				2496
Val Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe				
	820	825	830	
tac ttt ggt aat ctt gcc aag aat gtt ttg gcc gga cca tgg ctt att				2544
Tyr Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile				
	835	840	845	
gag gac gac act gct ttt gtt ccg aag ccc gtt gat acc acg ggt gtg				2592
Glu Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Gly Val				
	850	855	860	
aca ttg cca agt tct gtg gac caa atc aag gag aag ctg gcg gag aat				2640
Thr Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn				
	865	870	875	880
atc cac gag atg tgg gct cta aac aaa atc gaa gcg ggc tgg tcg tgg				2688
Ile His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp				
	885	890	895	
ggc gag cac cga gat gac tac cac cgc atc cat cct tgc ctc acc cat				2736
Gly Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His				
	900	905	910	
ttc gag aag ctt ccg gcg gcg gaa aag cga tac gac aat caa cta gct				2784
Phe Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala				
	915	920	925	
gtg caa acg ctg aag acg att atc tcg ctg gga tac tac ata acc atg				2832
Val Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met				
	930	935	940	
gac aag cca cca gca cgc att cgc cca gtg cgc ctg ccc aac gag atc				2880
Asp Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile				

945	950	955	960	
ttc atg cag ggc aat ggc tac aag ccg gct cca ctt gac cta agc gcc				2928
Phe Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala				
	965	970	975	
gtg aca ctc acc ccc aag ttg gag gag ctt gtg gac cag ctg gcc gag				2976
Val Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu				
	980	985	990	
aac act cac aat ttg tgg gca cgg gag cgc atc cag cag ggt tgg act				3024
Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr				
	995	1000	1005	
tat ggt ctg aac gag gat agt gaa aac cac agg agt cca cac ttg				3069
Tyr Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu				
	1010	1015	1020	
gtg cca tat gcc aaa gtg gac gag gct atc aag aag gcc aac agg				3114
Val Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg				
	1025	1030	1035	
gac aca gcg tcg gag aca gtg cga acg ctc ctg gtt tac gga tat				3159
Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly Tyr				
	1040	1045	1050	
gtc ttg gat cct ccg acg ggc gaa gga acg gag gca ctt ctg gcc				3204
Val Leu Asp Pro Pro Thr Gly Glu Gly Thr Glu Ala Leu Leu Ala				
	1055	1060	1065	
gag gca caa cgc ctc aag ttc gcc gga ttc cgg act tac agg gtg				3249
Glu Ala Gln Arg Leu Lys Phe Ala Gly Phe Arg Thr Tyr Arg Val				
	1070	1075	1080	
gag cgc aac tac gcc gtg aca tcg ggc aag tgg tac ttc gaa ttc				3294
Glu Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe				
	1085	1090	1095	
gag gtc ctc acg tcc gga cca atg cga gtg ggt tgg gca cgg gcc				3339
Glu Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala				
	1100	1105	1110	
gat tgc tat ccg gga gcg atg ctg ggc agc gag gac acc agt tgg				3384
Asp Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp				
	1115	1120	1125	
gcc ttc gat gga cac aat gtg acc aaa atg cac gcc gga tcc att				3429
Ala Phe Asp Gly His Asn Val Thr Lys Met His Ala Gly Ser Ile				
	1130	1135	1140	
gag cac ttc gga gtg cgg tat gag gct ggc gat gtc att ggt tgt				3474
Glu His Phe Gly Val Arg Tyr Glu Ala Gly Asp Val Ile Gly Cys				
	1145	1150	1155	
ttc atc gat gtc aag gag caa acg atc agc ttc tcg ttg aac gga				3519
Phe Ile Asp Val Lys Glu Gln Thr Ile Ser Phe Ser Leu Asn Gly				
	1160	1165	1170	
gaa ctc ctg atg gac gcg ctg ggc ggc gag acg acc ttt gcc gac				3564
Glu Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala Asp				

1175	1180	1185	
gta acc gcc gag ggg gtg ggc	ttc gtg ccc gcc tgc	acc ctg gga	3609
Val Thr Ala Glu Gly Val Gly	Phe Val Pro Ala Cys	Thr Leu Gly	
1190	1195	1200	
gtg ggc cag aag gcg cgc ctc	atc tac ggc cag gac	gtg gac tca	3654
Val Gly Gln Lys Ala Arg Leu	Ile Tyr Gly Gln Asp	Val Asp Ser	
1205	1210	1215	
ctc aag ttc ttc acc act tgt	ggc ctg caa gag gga	tac gag ccg	3699
Leu Lys Phe Phe Thr Thr Cys	Gly Leu Gln Glu Gly	Tyr Glu Pro	
1220	1225	1230	
ttc tgc gtg aac atg cgc cgc	ccg gtt acc cac tgg	tac acc aag	3744
Phe Cys Val Asn Met Arg Arg	Pro Val Thr His Trp	Tyr Thr Lys	
1235	1240	1245	
gac cag ccc att ttt gag aac	acc gag gag atg ccc	gac tgc cgc	3789
Asp Gln Pro Ile Phe Glu Asn	Thr Glu Glu Met Pro	Asp Cys Arg	
1250	1255	1260	
atc gat gtc acc cgg att ccc	ggc ggc gcc gac acc	ccg ccg cac	3834
Ile Asp Val Thr Arg Ile Pro	Gly Gly Ala Asp Thr	Pro Pro His	
1265	1270	1275	
tta aag atc tcg cac aac acc	ttc gag acc atg gag	aag gcc aac	3879
Leu Lys Ile Ser His Asn Thr	Phe Glu Thr Met Glu	Lys Ala Asn	
1280	1285	1290	
tgg gag ttc ctg cgt ctt tcc	ctg ccc gtg acc tgc	atg ggt gag	3924
Trp Glu Phe Leu Arg Leu Ser	Leu Pro Val Thr Cys	Met Gly Glu	
1295	1300	1305	
ttt atc agc gaa cag gag aag	gcc aga cgc tgg gac	gag att aag	3969
Phe Ile Ser Glu Gln Glu Lys	Ala Arg Arg Trp Asp	Glu Ile Lys	
1310	1315	1320	
aac cgg cag tac cga cta atg	cgc gag gcg gag atc	gct gcc caa	4014
Asn Arg Gln Tyr Arg Leu Met	Arg Glu Ala Glu Ile	Ala Ala Gln	
1325	1330	1335	
atg cag gtc cag aca cag gcc	gcc cac atg gac cac	atg ttg aaa	4059
Met Gln Val Gln Thr Gln Ala	Ala His Met Asp His	Met Leu Lys	
1340	1345	1350	
ggg ggc ttc aat atg aac gac	atc aag ggc ttg acc	cgt aat ttc	4104
Gly Gly Phe Asn Met Asn Asp	Ile Lys Gly Leu Thr	Arg Asn Phe	
1355	1360	1365	
gat gag cac gcg gat gct gag	gca gat cac atg atg	cgc gga ccc	4149
Asp Glu His Ala Asp Ala Glu	Ala Asp His Met Met	Arg Gly Pro	
1370	1375	1380	
aac cgt ccg cct cgc aag gga	tcg ctc acc cgc aac	ata acc ttc	4194
Asn Arg Pro Pro Arg Lys Gly	Ser Leu Thr Arg Asn	Ile Thr Phe	
1385	1390	1395	
gaa aca gac atg tcc gcc gcc	ttg gac gag atg cag	cgt tcc acg	4239
Glu Thr Asp Met Ser Ala Ala	Leu Asp Glu Met Gln	Arg Ser Thr	

1400							1405							1410							
tcg	gtg	ctt	gac	atg	aac	ggg	ctg	ggc	gaa	gag	atg	gat	gac	aag							4284
Ser	Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys							
1415							1420							1425							
aag	aag	cgc	ggc	cgc	agc	ccc	ttt	aag	ttc	ttc	tcg	aag	aag	tcg							4329
Lys	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser							
1430							1435							1440							
cgt	gat	cag	agc	cgc	gaa	aag	atg	ggc	gct	cgc	acc	ctg	gac	acc							4374
Arg	Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr							
1445							1450							1455							
tct	ctg	gag	cgc	cga	aat	acg	gtg	gct	cat	ggc	cgg	aac	gtg	gtt							4419
Ser	Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val							
1460							1465							1470							
aac	cag	cag	atg	acc	aca	cga	gct	cca	act	ctg	cgg	tta	aat	aat							4464
Asn	Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn							
1475							1480							1485							
gcc	gaa	atc	cct	ccc	agc	cct	gtg	ccc	cag	gga	cca	aag	cag	ttg							4509
Ala	Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu							
1490							1495							1500							
agt	ggc	tca	aat	ctt	ggc	caa	cag	ccg	gtg	gaa	act	tcg	ggc	gac							4554
Ser	Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp							
1505							1510							1515							
gag	atg	ttc	gat	gcc	gag	tgc	ctc	aag	ttg	atc	aac	gag	tat	ttc							4599
Glu	Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe							
1520							1525							1530							
tat	gga	gta	aga	atc	ttt	ccc	ggc	cag	gat	ccc	acg	cac	gtg	tac							4644
Tyr	Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr							
1535							1540							1545							
gtc	ggc	tgg	gtc	act	acg	cag	tat	cac	ctg	cac	agc	cgt	gag	ttt							4689
Val	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe							
1550							1555							1560							
aac	aag	aac	aag	gtt	cgc	cgt	gga	tca	gtc	tac	atc	gag	gat	gac							4734
Asn	Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp							
1565							1570							1575							
tac	gag	atg	gcc	att	gaa	cgg	atc	gac	cgc	cag	agt	tgc	tat	gta							4779
Tyr	Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val							
1580							1585							1590							
gtt	cga	gcg	gac	gag	ctc	ttc	aac	gag	gtt	acc	cag	gat	gcc	tca							4824
Val	Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser							
1595							1600							1605							
ggc	aag	gga	gcc	tca	cag	ggc	atg	ttc	gtt	ggc	tgc	ttc	gtg	gac							4869
Gly	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp							
1610							1615							1620							
aca	gcc	acc	ggc	atc	atc	cgc	ttc	act	tgc	gag	ggc	aag	gac	acc							4914
Thr	Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr							

1625	1630	1635	
tct cac cgc tgg atg atg gag Ser His Arg Trp Met Met Glu 1640	cca gac acc aag ctc Pro Asp Thr Lys Leu 1645	ttc ccg gcc Phe Pro Ala 1650	4959
att ttc gtg gaa gcc acc agc Ile Phe Val Glu Ala Thr Ser 1655	aag gag atc ctt cag Lys Glu Ile Leu Gln 1660	atc gag ttg Ile Glu Leu 1665	5004
gga cgt acc cct acc aca ttg Gly Arg Thr Pro Thr Thr Leu 1670	ccc ctt tcg gcg gcg Pro Leu Ser Ala Ala 1675	gta ctg ccc Val Leu Pro 1680	5049
acc agt gac aag cat ata aat Thr Ser Asp Lys His Ile Asn 1685	cca cag tcc ccg ccg Pro Gln Ser Pro Pro 1690	cgt ctg aag Arg Leu Lys 1695	5094
gtc cag tgc ctg cgt ccg cat Val Gln Cys Leu Arg Pro His 1700	cag tgg gct aga gtt Gln Trp Ala Arg Val 1705	cca aat act Pro Asn Thr 1710	5139
gcg ctc cag gtg cat gcg ctg Ala Leu Gln Val His Ala Leu 1715	aaa ctc tcc gac gtg Lys Leu Ser Asp Val 1720	agg ggt tgg Arg Gly Trp 1725	5184
tcc atg ttg tgc gag gac ccc Ser Met Leu Cys Glu Asp Pro 1730	gtg tcc atg ctg gcc Val Ser Met Leu Ala 1735	ctg cgc atc Leu Arg Ile 1740	5229
cca gag gag gat cgc tgt ata Pro Glu Glu Asp Arg Cys Ile 1745	gat att ctg gag ctc Asp Ile Leu Glu Leu 1750	atc gag atg Ile Glu Met 1755	5274
gac aag ctt ttg tcc ttc cat Asp Lys Leu Leu Ser Phe His 1760	gcc cac agt cta acg Ala His Ser Leu Thr 1765	ctc tat gcg Leu Tyr Ala 1770	5319
gct ctt tgt tac caa tcc aat Ala Leu Cys Tyr Gln Ser Asn 1775	tac aga gct gcc cat Tyr Arg Ala Ala His 1780	gcc ctg tgc Ala Leu Cys 1785	5364
cag cat gtg gac cag aag cag Gln His Val Asp Gln Lys Gln 1790	ctg ctc tac gcc atc Leu Leu Tyr Ala Ile 1795	cgg tcg gag Arg Ser Glu 1800	5409
tac atg agc gga cca ctg cgg Tyr Met Ser Gly Pro Leu Arg 1805	cag ggc ttc tac gac Gln Gly Phe Tyr Asp 1810	ctg ctg atc Leu Leu Ile 1815	5454
gcc ctg cat ctg gag tcg cat Ala Leu His Leu Glu Ser His 1820	gcc aca acc atg gag Ala Thr Thr Met Glu 1825	gtg tgc aag Val Cys Lys 1830	5499
aac gag tac atc aca ccg ctg Asn Glu Tyr Ile Thr Pro Leu 1835	gga gcc gag ctc aag Gly Ala Glu Leu Lys 1840	gaa ctg tac Glu Leu Tyr 1845	5544
tcc gat gag gag atg cag cac Ser Asp Glu Glu Met Gln His 1850	tca ctg aga tcc ctg Ser Leu Arg Ser Leu 1855	gtt acg gag Val Thr Glu 1860	5589



1850	1855	1860	
tca gtg cgt ccg cag ctg cgg Ser Val Arg Pro Gln Leu Arg 1865	atg acg gag atc acc Met Thr Glu Ile Thr 1870	acc gaa ccg atc Thr Glu Pro Ile 1875	5634
ccc gac atc gac caa ttg tac Pro Asp Ile Asp Gln Leu Tyr 1880	tcc ccg aag ttc ccc Ser Pro Lys Phe Pro 1885	cta gaa gta Leu Glu Val 1890	5679
gtc agg cag ttt gtc atg gag Val Arg Gln Phe Val Met Glu 1895	gcg ctg aag gat gcc Ala Leu Lys Asp Ala 1900	gtc gag atc Val Glu Ile 1905	5724
aat cag gtg cac aac cgc gat Asn Gln Val His Asn Arg Asp 1910	ccc atc ggc tgg acc Pro Ile Gly Trp Thr 1915	aac gag aac Asn Glu Asn 1920	5769
ctc ttc ctc cct cta atc aag Leu Phe Leu Pro Leu Ile Lys 1925	ctc aca gac cgg cta Leu Thr Asp Arg Leu 1930	ctc ttg gtc Leu Leu Val 1935	5814
ggc gtc ctg act gac gaa gat Gly Val Leu Thr Asp Glu Asp 1940	gtc cag cgg cta ttg Val Gln Arg Leu Leu 1945	gtc atg atc Val Met Ile 1950	5859
gac ccg gag acc tgg gac caa Asp Pro Glu Thr Trp Asp Gln 1955	gcc ttc gaa aga gag Ala Phe Glu Arg Glu 1960	ggt aag gat Gly Lys Asp 1965	5904
gag cac cgc aag ggc ttg ctc Glu His Arg Lys Gly Leu Leu 1970	acc atg aag atg gcc Thr Met Lys Met Ala 1975	gag ggc gcc Glu Gly Ala 1980	5949
aag ctg cag atg cgc tac ctg Lys Leu Gln Met Arg Tyr Leu 1985	ctg cac cat ctc tac Leu His His Leu Tyr 1990	gac acc cag Asp Thr Gln 1995	5994
ctg cgc cat cga gtg gag agc Leu Arg His Arg Val Glu Ser 2000	atc atc gcg ttc tcc Ile Ile Ala Phe Ser 2005	cac gac ttc His Asp Phe 2010	6039
gtt ggc gac ctg cag acc gat Val Gly Asp Leu Gln Thr Asp 2015	cag ttg cga cgt tat Gln Leu Arg Arg Tyr 2020	atc gag atc Ile Glu Ile 2025	6084
aag caa tcc gat ttg ccc agt Lys Gln Ser Asp Leu Pro Ser 2030	gct gtt gcg gcc aaa Ala Val Ala Ala Lys 2035	aag act aaa Lys Thr Lys 2040	6129
gag ttc cgc tgt ccg ccg cgg Glu Phe Arg Cys Pro Pro Arg 2045	gag cag atg aac cag Glu Gln Met Asn Gln 2050	att ctc tgc Ile Leu Cys 2055	6174
ttc aag aac ctc gaa ccc gat Phe Lys Asn Leu Glu Pro Asp 2060	gac cag gac aac tgc Asp Gln Asp Asn Cys 2065	acc tgt ggc Thr Cys Gly 2070	6219
ctt gag ttg cgc gga cgc ttg Leu Glu Leu Arg Gly Arg Leu 2075	ggc gat ttc cac gat Gly Asp Phe His Asp 2080	tcc ctc atg Ser Leu Met 2085	6264

2075	2080	2085	
caa aaa gtg tcg ctc aat gct Gln Lys Val Ser Leu Asn Ala 2090 2095	ctc cag gag ccg gat Leu Gln Glu Pro Asp 2100	ggc gtc gag Gly Val Glu	6309
ggc aca gcg atc gag gag gta Gly Thr Ala Ile Glu Glu Val 2105 2110	aag aca gga ccc atc Lys Thr Gly Pro Ile 2115	acg aag atc Thr Lys Ile	6354
tac aac ttt att aac acc gtc Tyr Asn Phe Ile Asn Thr Val 2120 2125	aag gag ctg gag gag Lys Glu Leu Glu Glu 2130	ggc ccc aag Gly Pro Lys	6399
gag gtg gag gag ccg gag aag Glu Val Glu Glu Pro Glu Lys 2135 2140	aag aca cca gag gag Lys Thr Pro Glu Glu 2145	gtg ttc cgc Val Phe Arg	6444
aaa gtt ctc att aag acg atc Lys Val Leu Ile Lys Thr Ile 2150 2155	gtc agc tgg gcc gag Val Ser Trp Ala Glu 2160	gag tca cag Glu Ser Gln	6489
atc gag aat ccc aaa ctg gtg Ile Glu Asn Pro Lys Leu Val 2165 2170	cgc gag atg ttt agt Arg Glu Met Phe Ser 2175	ctg ctg ctg Leu Leu Leu	6534
cgg cag tac gac acc gtc gga Arg Gln Tyr Asp Thr Val Gly 2180 2185	gaa ttg gtt cgt gcc Glu Leu Val Arg Ala 2190	ctg gag aag Leu Glu Lys	6579
acg tac gtg ata aac acc cga Thr Tyr Val Ile Asn Thr Arg 2195 2200	gcc cgc gac gac gtg Ala Arg Asp Asp Val 2205	gca gag atg Ala Glu Met	6624
tgg gtg ggc ctc agc cag att Trp Val Gly Leu Ser Gln Ile 2210 2215	cgc gcc ctg ctg ccc Arg Ala Leu Leu Pro 2220	gtc cag atg Val Gln Met	6669
agc cag gaa gag gag gaa ctg Ser Gln Glu Glu Glu Glu Leu 2225 2230	atg cgc aag cgg ctg Met Arg Lys Arg Leu 2235	tgg aag ctg Trp Lys Leu	6714
gtt aac aac gcc acc ttc ttt Val Asn Asn Ala Thr Phe Phe 2240 2245	cag cac ccg gac ctc Gln His Pro Asp Leu 2250	ata cgc atc Ile Arg Ile	6759
ctg cgt gtc cac gag aac gtg Leu Arg Val His Glu Asn Val 2255 2260	atg gca gtg atg atg Met Ala Val Met Met 2265	aac aca ctc Asn Thr Leu	6804
gga cgg agg gca cag gca caa Gly Arg Arg Ala Gln Ala Gln 2270 2275	agc gat gcg ccc acc Ser Asp Ala Pro Thr 2280	cag tcg gag Gln Ser Glu	6849
gta gcc gaa gga gct ccg tcc Val Ala Glu Gly Ala Pro Ser 2285 2290	aag gag aag gac acc Lys Glu Lys Asp Thr 2295	tcc cac gaa Ser His Glu	6894
atg gtg gta gct tgc tgc cga Met Val Val Ala Cys Cys Arg 2300	ttc ctc tgc tac ttc Phe Leu Cys Tyr Phe 2305	tgt cgc act Cys Arg Thr	6939

2300	2305	2310	
ggt cgc caa aac caa aag gcc Gly Arg Gln Asn Gln Lys Ala 2315	atg ttt gat cac ttc Met Phe Asp His Phe 2320	gac ttt ctg Asp Phe Leu 2325	6984
ctg gac aac gcc aac atc ctg Leu Asp Asn Ala Asn Ile Leu 2330	ctg gca cgg cca agc Leu Ala Arg Pro Ser 2335	ctg cga gga Leu Arg Gly 2340	7029
tcc acg ccc ctc gat gtg gca Ser Thr Pro Leu Asp Val Ala 2345	tac tcg agt ttg atg Tyr Ser Ser Leu Met 2350	gag aac aca Glu Asn Thr 2355	7074
gaa ttg gct ctg gcc ctg agg Glu Leu Ala Leu Ala Leu Arg 2360	gaa cac tat cta gaa Glu His Tyr Leu Glu 2365	aag atc gcc Lys Ile Ala 2370	7119
gtc tac ctc tcg cga tgc gga Val Tyr Leu Ser Arg Cys Gly 2375	cta cag agc aac tcg Leu Gln Ser Asn Ser 2380	gag ctc gtg Glu Leu Val 2385	7164
gag aag ggc tat ccg gat ctg Glu Lys Gly Tyr Pro Asp Leu 2390	ggt tgg gat ccc gtc Gly Trp Asp Pro Val 2395	gaa ggt gag Glu Gly Glu 2400	7209
cgt tac ccg gac ttc ctg cgc Arg Tyr Pro Asp Phe Leu Arg 2405	tat tgc gtt tgg gtc Tyr Cys Val Trp Val 2410	aac ggc gag Asn Gly Glu 2415	7254
agc gtc gag gag aat gcg aac Ser Val Glu Glu Asn Ala Asn 2420	ctt gtc att cga ctt Leu Val Ile Arg Leu 2425	ctt atc cgt Leu Ile Arg 2430	7299
cgt ccg gaa tgc ttg gga ccg Arg Pro Glu Cys Leu Gly Pro 2435	gct cta aga gga gaa Ala Leu Arg Gly Glu 2440	gga gag ggt Gly Glu Gly 2445	7344
ctg ttc cgc gcc atc gtc gag Leu Phe Arg Ala Ile Val Glu 2450	gct aat cgc atg tcg Ala Asn Arg Met Ser 2455	gag cgc atc Glu Arg Ile 2460	7389
tcg gac cgc tgc aag atg cag Ser Asp Arg Cys Lys Met Gln 2465	gac gag gcc gag ggc Asp Glu Ala Glu Gly 2470	acc att gcc Thr Ile Ala 2475	7434
ggt cta aac ttc aca cat cct Gly Leu Asn Phe Thr His Pro 2480	ctg ccg gaa ggc gag Leu Pro Glu Gly Glu 2485	gag gac gag Glu Asp Glu 2490	7479
gac tat atc gat acc ggt gcc Asp Tyr Ile Asp Thr Gly Ala 2495	gcc att ctg aac ttc Ala Ile Leu Asn Phe 2500	tac tgc acc Tyr Cys Thr 2505	7524
ctt gtg gac cta ctg ggc cgc Leu Val Asp Leu Leu Gly Arg 2510	tgc gct ccg gac gct Cys Ala Pro Asp Ala 2515	tcg gtc atc Ser Val Ile 2520	7569
gag cag ggc aag aac gag tcc Glu Gln Gly Lys Asn Glu Ser 2510	ctg agg gct aga gct Leu Arg Ala Arg Ala 2515	att ctg aga Ile Leu Arg 2520	7614

2525	2530	2535	
tct ctg gtg cca ctg gag gat Ser Leu Val Pro Leu Glu Asp 2540	ttg cag ggg gtg ctc Leu Gln Gly Val Leu 2545	agc ctg aaa Ser Leu Lys 2550	7659
ttc acc ctc tca cag acg gcg Phe Thr Leu Ser Gln Thr Ala 2555	ccc ggc gag gag aag Pro Gly Glu Glu Lys 2560	ccc aaa tcg Pro Lys Ser 2565	7704
gac atg ccg tcc ggc ctg cta Asp Met Pro Ser Gly Leu Leu 2570	ccc aac aat aag cag Pro Asn Asn Lys Gln 2575	agc atc gtg Ser Ile Val 2580	7749
ctc ttc ctg gag cgc gtc tac Leu Phe Leu Glu Arg Val Tyr 2585	ggc atc gag gca cag Gly Ile Glu Ala Gln 2590	gac ctc ttc Asp Leu Phe 2595	7794
tac cgc ctg ctg gag gac gcc Tyr Arg Leu Leu Glu Asp Ala 2600	ttc ctt ccg gat ctc Phe Leu Pro Asp Leu 2605	cgc acc gcc Arg Thr Ala 2610	7839
acc att ctg gac aag agc gat Thr Ile Leu Asp Lys Ser Asp 2615	gga tcc gag agc gac Gly Ser Glu Ser Asp 2620	atg gcg ctg Met Ala Leu 2625	7884
gcc atg aac cgc tac ata ggc Ala Met Asn Arg Tyr Ile Gly 2630	aac tcg atc ctg ccg Asn Ser Ile Leu Pro 2635	ctg ctc atc Leu Leu Ile 2640	7929
aag cac tcc aag ttt tac aac Lys His Ser Lys Phe Tyr Asn 2645	gag gcc gag aac tac Glu Ala Glu Asn Tyr 2650	gcg agc ctc Ala Ser Leu 2655	7974
ttg gat gcc act ttg cac acg Leu Asp Ala Thr Leu His Thr 2660	gtc tac cgg ctg tcc Val Tyr Arg Leu Ser 2665	aag aac cgt Lys Asn Arg 2670	8019
atg ctg acc aag ggg caa cgc Met Leu Thr Lys Gly Gln Arg 2675	gag gct gtt tcc gac Glu Ala Val Ser Asp 2680	ttc ctg gtg Phe Leu Val 2685	8064
gcc ctc aca tcc caa atg caa Ala Leu Thr Ser Gln Met Gln 2690	cct gcc atg ctg ctc Pro Ala Met Leu Leu 2695	aag ctg ctg Lys Leu Leu 2700	8109
cgc aag ttg act gtg gat gtg Arg Lys Leu Thr Val Asp Val 2705	tcc aag ctg tcc gag Ser Lys Leu Ser Glu 2710	tac acc acc Tyr Thr Thr 2715	8154
gtg gcc ctc cgg ctt ctc acc Val Ala Leu Arg Leu Leu Thr 2720	ctg cac ttc gat cgc Leu His Phe Asp Arg 2725	tgc gcc aaa Cys Ala Lys 2730	8199
tac tac ggc tca act caa ggc Tyr Tyr Gly Ser Thr Gln Gly 2735	cag ggc tcc tat gga Gln Gly Ser Tyr Gly 2740	gcc tca tcg Ala Ser Ser 2745	8244
gac gag gag aag cgc ctg acg Asp Glu Glu Lys Arg Leu Thr 2750	atg ctg ctg ttc tcg Met Leu Leu Phe Ser 2755	aac att ttt Asn Ile Phe 2760	8289

2750	2755	2760	
gac tcg ctc agc aac atg Asp Ser Leu Ser Asn Met 2765	gac tat gac ccg gaa ctg Asp Tyr Asp Pro Glu Leu 2770	ctg ttc ggt aag Leu Phe Gly Lys 2775	8334
gca ctg ccc tgt ctg atc Ala Leu Pro Cys Leu Ile 2780	gcc atc ggc tgc gcc ctg Ala Ile Gly Cys Ala Leu 2785	cca ccg gac Pro Pro Asp 2790	8379
tac agc ctg tcc aag aac Tyr Ser Leu Ser Lys Asn 2795	acg gac gag gac tac Thr Asp Glu Asp Tyr 2800	tac ggc cgc cag Tyr Gly Arg Gln 2805	8424
atg ggc gca ccg gat cag Met Gly Ala Pro Asp Gln 2810	ccg cag tac atg ccc Pro Gln Tyr Met Pro 2815	aat ccg atc gac Asn Pro Ile Asp 2820	8469
acc aac aac gtg cat ctg Thr Asn Asn Val His Leu 2825	gac aac gac ctc aac Asp Asn Asp Leu Asn 2830	tcg ctg gtc cag Ser Leu Val Gln 2835	8514
aag ttc agc gag cac tac Lys Phe Ser Glu His Tyr 2840	cac gat gcg tgg gcc His Asp Ala Trp Ala 2845	agt cgg cgg ttg Ser Arg Arg Leu 2850	8559
gag ggt ggc tgg acc tac Glu Gly Gly Trp Thr Tyr 2855	gga gac atc cga tcc Gly Asp Ile Arg Ser 2860	gat aat gat cgc Asp Asn Asp Arg 2865	8604
aag cat cct cgc ctg aag Lys His Pro Arg Leu Lys 2870	ccc tac aac atg ctc Pro Tyr Asn Met Leu 2875	agt gaa tac gaa Ser Glu Tyr Glu 2880	8649
cgc gag cgg tac cgg gat Arg Glu Arg Tyr Arg Asp 2885	ccg gtg cga gag tgc Pro Val Arg Glu Cys 2890	ctg aag ggt ctg Leu Lys Gly Leu 2895	8694
ctg gcc atc gga tgg acc Leu Ala Ile Gly Trp Thr 2900	gtg gag cac tcc gag Val Glu His Ser Glu 2905	gtg gag gtg ccg Val Glu Val Pro 2910	8739
ctg aat cat cgc gga tca Leu Asn His Arg Gly Ser 2915	acg cgg cgt cag tcg Thr Arg Arg Gln Ser 2920	aag cct caa att Lys Pro Gln Ile 2925	8784
aac gag ggc agc ccg ttc Asn Glu Gly Ser Pro Phe 2930	aac tat aac ccg cac Asn Tyr Asn Pro His 2935	ccg gtg gac atg Pro Val Asp Met 2940	8829
agc aac ctg acc ctg agc Ser Asn Leu Thr Leu Ser 2945	agg gag atg cag aac Arg Glu Met Gln Asn 2950	atg gct gag cgc Met Ala Glu Arg 2955	8874
ctg gcg gag aat tcc cac Leu Ala Glu Asn Ser His 2960	gac atc tgg gcc aag Asp Ile Trp Ala Lys 2965	aag aag aag aac gag Lys Lys Lys Asn Glu 2970	8919
gag ctc aac ggc tgc ggt Glu Leu Asn Gly Cys Gly 2975	ggc gtt atc cat ccg Gly Val Ile His Pro 2980	caa ctg gtg cca Gln Leu Val Pro 2985	8964

2975	2980	2985	
tat gat ctt ctg acc gac Tyr Asp Leu Leu Thr Asp 2990	aaa gag aag aag gat Lys Glu Lys Lys Lys Asp 2995	cgc gag cgc Arg Glu Arg 3000	9009
tcg cag gag ttc ctt aag Ser Gln Glu Phe Leu Lys 3005	tac atg caa tac cag ggt Tyr Met Gln Tyr Gln Gly 3010	tac aag ctg Tyr Lys Leu 3015	9054
cac aag cca tca aag gga His Lys Pro Ser Lys Gly 3020	gga gct gtg gag gag ggc Gly Ala Val Glu Glu Gly 3025	ggc gcc acc Gly Ala Thr 3030	9099
cag gct gcc gtt gaa ctg Gln Ala Ala Val Glu Leu 3035	cgt ttc tcg tac tcc cta Arg Phe Ser Tyr Ser Leu 3040	ctg gaa aag Leu Glu Lys 3045	9144
ctc ata cag tat ctg gat Leu Ile Gln Tyr Leu Asp 3050	aga gcc acc atc aac atg Arg Ala Thr Ile Asn Met 3055	aaa ctg cta Lys Leu Leu 3060	9189
aag cca tcg acc acg ttc Lys Pro Ser Thr Thr Phe 3065	agt cga cgc tca tcc ttt Ser Arg Arg Ser Ser Phe 3070	aag acg gcc Lys Thr Ala 3075	9234
acc cgg gac atc aag ttc Thr Arg Asp Ile Lys Phe 3080	ttc tcg aag gtg gtg ctg Phe Ser Lys Val Val Leu 3085	cct cta atg Pro Leu Met 3090	9279
gag aag tac ttc tca acg Glu Lys Tyr Phe Ser Thr 3095	cat cgc aac tac ttc atc His Arg Asn Tyr Phe Ile 3100	gcc att gcc Ala Ile Ala 3105	9324
acg gca acc aat aat att Thr Ala Thr Asn Asn Ile 3110	gga gca gcc tcg ctc aag Gly Ala Ala Ser Leu Lys 3115	gag aag gaa Glu Lys Glu 3120	9369
atg gtg gcc tcg atc ttc Met Val Ala Ser Ile Phe 3125	tgc aag ctg gcc gct cta Cys Lys Leu Ala Ala Leu 3130	ctg cgt aac Leu Arg Asn 3135	9414
cgg ctg agt gca ttt gga Arg Leu Ser Ala Phe Gly 3140	ccg gat gtc cgc atc aca Pro Asp Val Arg Ile Thr 3145	gta cgg tgc Val Arg Cys 3150	9459
ctc cag gtc ctg gtc aag Leu Gln Val Leu Val Lys 3155	ggc att gat gca cgc acc Gly Ile Asp Ala Arg Thr 3160	ctg acc aag Leu Thr Lys 3165	9504
aat tgt ccc gag ttt att Asn Cys Pro Glu Phe Ile 3170	cgc acc tcc atg ctg acc Arg Thr Ser Met Leu Thr 3175	ttc ttc aac Phe Phe Asn 3180	9549
cag aca tcc gat gac ttg Gln Thr Ser Asp Asp Leu 3185	ggc aac acg atc ctt aac Gly Asn Thr Ile Leu Asn 3190	ctg cag gat Leu Gln Asp 3195	9594
ggc aag tac agt cac ctg Gly Lys Tyr Ser His Leu 3195	aga ggc act cac ctg aaa Arg Gly Thr His Leu Lys 3200	acc tcc aca Thr Ser Thr 3205	9639

3200	3205	3210	
tcg ttg gga tat gta aac cag	gtg gtt ttg ccg gtg	ctt act gcc	9684
Ser Leu Gly Tyr Val Asn Gln	Val Val Leu Pro Val	Leu Thr Ala	
3215	3220	3225	
atg ttt gat cat ctg gca gcc	tgc gac tat ggc agc	gat ttg ctt	9729
Met Phe Asp His Leu Ala Ala	Cys Asp Tyr Gly Ser	Asp Leu Leu	
3230	3235	3240	
ctg gac gag att cag gtg gct	tcc tac aag atc ctc	gct gca ctg	9774
Leu Asp Glu Ile Gln Val Ala	Ser Tyr Lys Ile Leu	Ala Ala Leu	
3245	3250	3255	
tat cat ttg ggt acc gat ggc	acc ctg acg cat gac	agg aag tat	9819
Tyr His Leu Gly Thr Asp Gly	Thr Leu Thr His Asp	Arg Lys Tyr	
3260	3265	3270	
ctt aag acc gag att gag agg	cat aga ccc gct ctg	ggc tcc tgt	9864
Leu Lys Thr Glu Ile Glu Arg	His Arg Pro Ala Leu	Gly Ser Cys	
3275	3280	3285	
ctg gga gct tac agc tcc tgc	ttt ccg gtg gcc ttc	ttg gag ccc	9909
Leu Gly Ala Tyr Ser Ser Cys	Phe Pro Val Ala Phe	Leu Glu Pro	
3290	3295	3300	
cac ctt aac aag cac aac cag	tac tcg ctg ctc aac	cgt att gcg	9954
His Leu Asn Lys His Asn Gln	Tyr Ser Leu Leu Asn	Arg Ile Ala	
3305	3310	3315	
gat cac tca ctg gag gcg cag	gac att atg gtc aag	atg gag agc	9999
Asp His Ser Leu Glu Ala Gln	Asp Ile Met Val Lys	Met Glu Ser	
3320	3325	3330	
tgt atg cca aat cta gag acc	att ctc gcc gag gtc	gac cag ttt	10044
Cys Met Pro Asn Leu Glu Thr	Ile Leu Ala Glu Val	Asp Gln Phe	
3335	3340	3345	
gtg gag tcg gac aag aca tac	aat gat gcg cct cat	att atc gac	10089
Val Glu Ser Asp Lys Thr Tyr	Asn Asp Ala Pro His	Ile Ile Asp	
3350	3355	3360	
gtg atc ctg ccg ctg ctt tgc	gcc tat cta ccg ttt	tgg tgg tcc	10134
Val Ile Leu Pro Leu Leu Cys	Ala Tyr Leu Pro Phe	Trp Trp Ser	
3365	3370	3375	
cag gga ccg gat aat gtc agt	ccc acc agt ggc aac	cac gtg acc	10179
Gln Gly Pro Asp Asn Val Ser	Pro Thr Ser Gly Asn	His Val Thr	
3380	3385	3390	
atg gtc aca gcc gat cac atg	aat ccg ttg ctg cga	aat gtg ctt	10224
Met Val Thr Ala Asp His Met	Asn Pro Leu Leu Arg	Asn Val Leu	
3395	3400	3405	
aaa atg atc aag aag aac att	ggc aac gat aac gcc	cct tgg atg	10269
Lys Met Ile Lys Lys Asn Ile	Gly Asn Asp Asn Ala	Pro Trp Met	
3410	3415	3420	
act cgc att gcc gcc tat acg	cag cag att atc atc	aat acg tcg	10314
Thr Arg Ile Ala Ala Tyr Thr	Gln Gln Ile Ile Ile	Asn Thr Ser	

3425	3430	3435	
gag gag ctg ctc aag gat ccg	ttc ttg ccg ctg gcg	gag cgg gtg	10359
Glu Glu Leu Leu Lys Asp Pro	Phe Leu Pro Leu Ala	Glu Arg Val	
3440	3445	3450	
aag aag cgc act gag aac atg	ctg cac aag gag gac	agc atg cga	10404
Lys Lys Arg Thr Glu Asn Met	Leu His Lys Glu Asp	Ser Met Arg	
3455	3460	3465	
gga ttc atc aag tcg gcc acg	gac gac act tcg cag	gtg gag acc	10449
Gly Phe Ile Lys Ser Ala Thr	Asp Asp Thr Ser Gln	Val Glu Thr	
3470	3475	3480	
cag ctg cag gag gac tgg aat	ctg cta gtg cga gac	ata tac tcg	10494
Gln Leu Gln Glu Asp Trp Asn	Leu Leu Val Arg Asp	Ile Tyr Ser	
3485	3490	3495	
ttc tat ccc ctg ctc atc aag	tac gtg gat ctg cag	cga aac cac	10539
Phe Tyr Pro Leu Leu Ile Lys	Tyr Val Asp Leu Gln	Arg Asn His	
3500	3505	3510	
tgg ctg aag gac aac ata ccg	gag gcc gag gag ctc	tac aac cat	10584
Trp Leu Lys Asp Asn Ile Pro	Glu Ala Glu Glu Leu	Tyr Asn His	
3515	3520	3525	
gtg gca gag atc ttc aat ata	tgg tct aag agc cag	tac ttc ctt	10629
Val Ala Glu Ile Phe Asn Ile	Trp Ser Lys Ser Gln	Tyr Phe Leu	
3530	3535	3540	
aag gag gag cag aac ttc atc	tct gcc aat gag atc	gac aac atg	10674
Lys Glu Glu Gln Asn Phe Ile	Ser Ala Asn Glu Ile	Asp Asn Met	
3545	3550	3555	
gcc ttg atc atg cca act gca	acc agg agg tcg gcc	atc tcg gaa	10719
Ala Leu Ile Met Pro Thr Ala	Thr Arg Arg Ser Ala	Ile Ser Glu	
3560	3565	3570	
ggt gct cct gct gtg ggt ggc	aag gta aag aag aag	aag aag aac	10764
Gly Ala Pro Ala Val Gly Gly	Lys Val Lys Lys Lys	Lys Lys Asn	
3575	3580	3585	
agg gac aag aag cgc gac aag	gac aag gag gtg cag	gcc agt cta	10809
Arg Asp Lys Lys Arg Asp Lys	Asp Lys Glu Val Gln	Ala Ser Leu	
3590	3595	3600	
atg gtg gcc tgc ctg aaa cgc	ctc cta ccc gtt gga	ctg aat ctg	10854
Met Val Ala Cys Leu Lys Arg	Leu Leu Pro Val Gly	Leu Asn Leu	
3605	3610	3615	
ttc gcg ggt cga gag cag gaa	ctg gtg cag cac tgc	aag gat cgg	10899
Phe Ala Gly Arg Glu Gln Glu	Leu Val Gln His Cys	Lys Asp Arg	
3620	3625	3630	
tac ctg aag aag atg ccc gag	tac gat gtg atc gag	ttc gcc cgc	10944
Tyr Leu Lys Lys Met Pro Glu	Tyr Asp Val Ile Glu	Phe Ala Arg	
3635	3640	3645	
aac cag ctg acc ctg ccg gat	aag ctg gac ccg tcg	gac gag atg	10989
Asn Gln Leu Thr Leu Pro Asp	Lys Leu Asp Pro Ser	Asp Glu Met	



3650	3655	3660	
tcc tgg cag cat tac ctt tac Ser Trp Gln His Tyr Leu Tyr 3665	tca aag ctg ggc aag Ser Lys Leu Gly Lys 3670	acg gag gaa Thr Glu Glu 3675	11034
ccg gtg gac gaa cag gcg ctg Pro Val Asp Glu Gln Ala Leu 3680	gag aag gcc aat gtt Glu Lys Ala Asn Val 3685	aac tcc aac Asn Ser Asn 3690	11079
gag aag ggc aag gac aaa acc Glu Lys Gly Lys Asp Lys Thr 3695	cag gag aca gtg gat Gln Glu Thr Val Asp 3700	cgc atc gtg Arg Ile Val 3705	11124
gcg atg gcc aag gtt ctg ttt Ala Met Ala Lys Val Leu Phe 3710	ggc ctg cac atg atc Gly Leu His Met Ile 3715	gac cat cca Asp His Pro 3720	11169
caa cag cag agc aag aat gtc Gln Gln Gln Ser Lys Asn Val 3725	tac agg agc gtt gtg Tyr Arg Ser Val Val 3730	tcg atc caa Ser Ile Gln 3735	11214
agg aag cgt gcc gta atc gca Arg Lys Arg Ala Val Ile Ala 3740	tgc ttc cgt cag aca Cys Phe Arg Gln Thr 3745	tcg ctg cat Ser Leu His 3750	11259
tct cta ccc aga cat cgg gcc Ser Leu Pro Arg His Arg Ala 3755	tgc aac atc ttc gca Cys Asn Ile Phe Ala 3760	cga tcg tac Arg Ser Tyr 3765	11304
tac gag cag tgg ctg cag gag Tyr Glu Gln Trp Leu Gln Glu 3770	gag aac gtg ggc caa Glu Asn Val Gly Gln 3775	gag gtg atg Glu Val Met 3780	11349
gtc gaa gat ctg acg cag acg Val Glu Asp Leu Thr Gln Thr 3785	ttc gag gac tcc gag Phe Glu Asp Ser Glu 3790	aaa tcc aag Lys Ser Lys 3795	11394
aag gag ggc gag gag acg gac Lys Glu Gly Glu Glu Thr Asp 3800	agc aag ccg gat ccg Ser Lys Pro Asp Pro 3805	cta acc caa Leu Thr Gln 3810	11439
ctg gtt acc act ttc tgc cgc Leu Val Thr Thr Phe Cys Arg 3815	ggc gcc atg acg gaa Gly Ala Met Thr Glu 3820	cgc agc ggt Arg Ser Gly 3825	11484
gcc ctc cag gag gat ctg ctc Ala Leu Gln Glu Asp Leu Leu 3830	tac atg tcc tat gcc Tyr Met Ser Tyr Ala 3835	cag atc gcg Gln Ile Ala 3840	11529
gcc aag tcc acg ggc aag gag Ala Lys Ser Thr Gly Lys Glu 3845	gag gag gaa ggc ggc Glu Glu Glu Gly Gly 3850	gac gaa gaa Asp Glu Glu 3855	11574
ggc ggt gag ggt ggc gaa gag Gly Gly Glu Gly Gly Glu Glu 3860	gcc gaa ggc acc agc Ala Glu Gly Thr Ser 3865	atc cat gaa Ile His Glu 3870	11619
caa gag atg gag aag cag aag Gln Glu Met Glu Lys Gln Lys	ctg ctc ttc cat cag Leu Leu Phe His Gln	gca cgt ctc Ala Arg Leu	11664

3875	3880	3885	
tcc aat cgt ggc gtt gcc gaa	atg gtg ctg ttg cac	gtt tcc gcc	11709
Ser Asn Arg Gly Val Ala Glu	Met Val Leu Leu His	Val Ser Ala	
3890	3895	3900	
tcc aaa ggt ata cct tcg gag	atg gta atg acg aca	ctc aat ctc	11754
Ser Lys Gly Ile Pro Ser Glu	Met Val Met Thr	Leu Asn Leu	
3905	3910	3915	
ggc atc gcc att ttg cgc ggc	ggc aac atc gac atc	caa atg ggc	11799
Gly Ile Ala Ile Leu Arg Gly	Gly Asn Ile Asp Ile	Gln Met Gly	
3920	3925	3930	
atg ctg aac cac ttg aag gaa	aag aag gac gtt ggc	ttc ttt acc	11844
Met Leu Asn His Leu Lys Glu	Lys Lys Asp Val Gly	Phe Phe Thr	
3935	3940	3945	
tcc atc gcc gga ctg atg aac	tcc tgc agt gta ctg	gac ctg gac	11889
Ser Ile Ala Gly Leu Met Asn	Ser Cys Ser Val Leu	Asp Leu Asp	
3950	3955	3960	
gcc ttt gag cga aac acc aaa	gca gag ggt ctt ggt	gta ggt tcc	11934
Ala Phe Glu Arg Asn Thr Lys	Ala Glu Gly Leu Gly	Val Gly Ser	
3965	3970	3975	
gaa ggc gcc gcg ggc gag aag	aac atg cac gac gcg	gag ttc acc	11979
Glu Gly Ala Ala Gly Glu Lys	Asn Met His Asp Ala	Glu Phe Thr	
3980	3985	3990	
tgt gcg ctg ttc cgg ttc atc	cag ctg acc tgc gag	ggc cac aac	12024
Cys Ala Leu Phe Arg Phe Ile	Gln Leu Thr Cys Glu	Gly His Asn	
3995	4000	4005	
ttg gaa tgg caa aac tat ttg	agg acc cag gcg ggt	aac acc acc	12069
Leu Glu Trp Gln Asn Tyr Leu	Arg Thr Gln Ala Gly	Asn Thr Thr	
4010	4015	4020	
acc gtg aac gtg gtc atc tgt	act gtg gat tat ttg	ctt cgt ctg	12114
Thr Val Asn Val Val Ile Cys	Thr Val Asp Tyr Leu	Leu Arg Leu	
4025	4030	4035	
caa gag tcc atc atg gac ttc	tac tgg cac tac tcc	agc aaa gag	12159
Gln Glu Ser Ile Met Asp Phe	Tyr Trp His Tyr Ser	Ser Lys Glu	
4040	4045	4050	
atc atc gat ccc gct gga aag	gcc aac ttc ttc aag	gcc atc gaa	12204
Ile Ile Asp Pro Ala Gly Lys	Ala Asn Phe Phe Lys	Ala Ile Glu	
4055	4060	4065	
gtg gct agc caa gta ttt aac	acc ctc act gaa gtc	atc cag ggt	12249
Val Ala Ser Gln Val Phe Asn	Thr Leu Thr Glu Val	Ile Gln Gly	
4070	4075	4080	
cct tgt acc ctc aat cag cag	gcc ttg gca cac tcg	agg ttg tgg	12294
Pro Cys Thr Leu Asn Gln Gln	Ala Leu Ala His Ser	Arg Leu Trp	
4085	4090	4095	
gat gca gtt ggt ggc ttc ctc	ttc ctg ttt tcc cac	atg cag gac	12339
Asp Ala Val Gly Gly Phe Leu	Phe Leu Phe Ser His	Met Gln Asp	

4100	4105	4110	
aag ctg tca aag cac tcc agc Lys Leu Ser Lys His Ser Ser 4115	caa gtt gat ctg ctc Gln Val Asp Leu Leu 4120	aag gaa ctg Lys Glu Leu 4125	12384
ctg aat ctg caa aag gac atg Leu Asn Leu Gln Lys Asp Met 4130	atc acc atg atg ctt Ile Thr Met Met 4135	tcc atg ctg Ser Met Leu 4140	12429
gaa gga aat gtt gtt aac ggc Glu Gly Asn Val Val Asn Gly 4145	act att ggc aag cag Thr Ile Gly Lys Gln 4150	atg gtg gac Met Val Asp 4155	12474
acg ctg gtg gag tct gcc agc Thr Leu Val Glu Ser Ala Ser 4160	aat gtg gag ctg att Asn Val Glu Leu Ile 4165	ctt aag tac Leu Lys Tyr 4170	12519
ttc gac atg ttc ctg aag ctc Phe Asp Met Phe Leu Lys Leu 4175	gcc gac ctt atc gaa Ala Asp Leu Ile Glu 4180	tcg ccc agc Ser Pro Ser 4185	12564
ttc cac gaa gtg gac atg aag Phe His Glu Val Asp Met Lys 4190	aac gag ggt tgg gtg Asn Glu Gly Trp Val 4195	acc ccc aaa Thr Pro Lys 4200	12609
gac ttt agg gaa aag atg gag Asp Phe Arg Glu Lys Met Glu 4205	caa tcc aag aac tac Gln Ser Lys Asn Tyr 4210	aca ccg gaa Thr Pro Glu 4215	12654
gaa atg gat ttc ctt ttg gcc Glu Met Asp Phe Leu Leu Ala 4220	tgc tgc gag cgc aac Cys Cys Glu Arg Asn 4225	cac gag ggc His Glu Gly 4230	12699
aag atc gat tac cgg gcc ttc Lys Ile Asp Tyr Arg Ala Phe 4235	gtg gag cac ttc cac Val Glu His Phe His 4240	gaa cca tca Glu Pro Ser 4245	12744
aag gag atc ggt ttc aac ctg Lys Glu Ile Gly Phe Asn Leu 4250	gct gtg ctc ctg acc Ala Val Leu Leu Thr 4255	aac ctc agc Asn Leu Ser 4260	12789
gaa cac atg cca aac gaa ccg Glu His Met Pro Asn Glu Pro 4265	cgc ctg gcg cgc ttc Arg Leu Ala Arg Phe 4270	ctg gag acc Leu Glu Thr 4275	12834
gcc ggc tcg gtg ctc aac tac Ala Gly Ser Val Leu Asn Tyr 4280	ttc gag ccc ttc ctg Phe Glu Pro Phe Leu 4285	ggc cgc atc Gly Arg Ile 4290	12879
gag att ctc ggc agc tcc aag Glu Ile Leu Gly Ser Ser Lys 4295	cgc atc gag cgc gtt Arg Ile Glu Arg Val 4300	tac ttt gag Tyr Phe Glu 4305	12924
atc aag gac tcg aac atc gaa Ile Lys Asp Ser Asn Ile Glu 4310	cag tgg gag aag ccc Gln Trp Glu Lys Pro 4315	cag att cgc Gln Ile Arg 4320	12969
gag tcc aag cgt gcc ttc ttt Glu Ser Lys Arg Ala Phe Phe 4330	tat tcc atc gtc acc Tyr Ser Ile Val Thr 4335	gaa ggt ggc Glu Gly Gly 4340	13014

4325	4330	4335	
gac aag gag aaa ctg gag gcc Asp Lys Glu Lys Leu Glu Ala 4340	ttt gtg aac ttc tgc Phe Val Asn Phe Cys 4345	gag gac gcc Glu Asp Ala 4350	13059
atc ttt gag atg acc cac gcc Ile Phe Glu Met Thr His Ala 4355	tcg gga ctt atg gcc Ser Gly Leu Met Ala 4360	acc gat gat Thr Asp Asp 4365	13104
ggc ggt ggc aat gtg aag cgg Gly Gly Gly Asn Val Lys Arg 4370	gac act gcc tat agt Asp Thr Ala Tyr Ser 4375	tcc tat atg Ser Tyr Met 4380	13149
agc gag gaa gag gag gag cga Ser Glu Glu Glu Glu Glu Arg 4385	gcc gct cgt gat Ala Ala Arg Asp 4390	ccc atc cgc cgc Pro Ile Arg Arg 4395	13194
acc atc acc gcc gtc aaa gaa Thr Ile Thr Ala Val Lys Glu 4400	gga ctc aag ttc Gly Leu Lys Phe 4405	gtg cac atg Val His Met 4410	13239
ctt agt ccg gcg aac atc aag Leu Ser Pro Ala Asn Ile Lys 4415	cat cag atc gga His Gln Ile Gly 4420	gtg atg cag acc Val Met Gln Thr 4425	13284
aaa tcc ata cca gaa ctc ata Lys Ser Ile Pro Glu Leu Ile 4430	gtc ggc ttt ttc Val Gly Phe Phe 4435	aag atc atc ttc Lys Ile Ile Phe 4440	13329
tat ata ttt tac tat acc gga Tyr Ile Phe Tyr Tyr Thr Gly 4445	tat gca cac ttc Tyr Ala His Phe 4450	tgc gtg gtg cgt Cys Val Val Arg 4455	13374
tac ata ttc ggc atc cta ctg Tyr Ile Phe Gly Ile Leu 4460	aac ctg atg cga Asn Leu Met Arg 4465	gga cct gct cca Gly Pro Ala Pro 4470	13419
gag cag gag gag gaa ccg gta Glu Gln Glu Glu Glu Pro Val 4475	gtg gag gag gaa acg Val Glu Glu Glu Thr 4480	ttt gga aga Phe Gly Arg 4485	13464
gca ctg cca ccg ctg tcg ctt Ala Leu Pro Pro Leu Ser Leu 4490	gaa gaa cca ccg ggc Glu Glu Pro Pro Gly 4495	acg gtg caa Thr Val Gln 4500	13509
gcc ttt ggg ctg gac atc aac Ala Phe Gly Leu Asp Ile Asn 4505	aag gag gag aac ggc Lys Glu Glu Asn Gly 4510	atg tac aag Met Tyr Lys 4515	13554
gtg gtg gtg cac gaa tct cca Val Val Val His Glu Ser Pro 4520	gcc aat tcc tcg atg Ala Asn Ser Ser Met 4525	gag gag ggc Glu Glu Gly 4530	13599
gga gaa tcc agt ccc gag gac Gly Glu Ser Ser Pro Glu Asp 4535	gga gca gct gcc agc Gly Ala Ala Ala Ser 4540	ggc gaa ttg Gly Glu Leu 4545	13644
gtc gaa ggt gaa cca cac cag Val Glu Gly Glu Pro His Gln 4550	ggg ccc att tcc att Gly Pro Ile Ser Ile 4555	gtg gat ctg Val Asp Leu 4560	13689

4550	4555	4560	
ctg ggt gga gag gct gca aag Leu Gly Gly Glu Ala Ala Lys 4565	aag gcg gca cag gag Lys Ala Ala Gln Glu 4570	cgg cag gag Arg Gln Glu 4575	13734
gcg caa aag gct cag gag gcc Ala Gln Lys Ala Gln Glu Ala 4580	gct atg gcc tcc atc Ala Met Ala Ser Ile 4585	gag gcg gaa Glu Ala Glu 4590	13779
gcc aag aag tcg tca tct gcg Ala Lys Lys Ser Ser Ser Ala 4595	cct cag gag act cca Pro Gln Glu Thr Pro 4600	gct gtt cac Ala Val His 4605	13824
cag atc gac ttt tct cag tac Gln Ile Asp Phe Ser Gln Tyr 4610	acc cat cgc gcc gtt Thr His Arg Ala Val 4615	agc ttc ctc Ser Phe Leu 4620	13869
gcc aga aac ttc tac aac ctc Ala Arg Asn Phe Tyr Asn Leu 4625	aag tat gtg gcc ttg Lys Tyr Val Ala Leu 4630	gtg ctg gct Val Leu Ala 4635	13914
ttc agc att aac ttc atg ctg Phe Ser Ile Asn Phe Met Leu 4640	ctc ttc tac aaa gtc Leu Phe Tyr Lys Val 4645	acc tcg ttt Thr Ser Phe 4650	13959
acc gaa gaa gca gac agc tct Thr Glu Glu Ala Asp Ser Ser 4655	gcc gaa gag gag ctc Ala Glu Glu Glu Leu 4660	atc ctg ggc Ile Leu Gly 4665	14004
tcc ggg ccg gga gga ggt gcg Ser Gly Pro Gly Gly Gly Ala 4670	gac atc acg ggc tct Asp Ile Thr Gly Ser 4675	ggg ttt ggc Gly Phe Gly 4680	14049
gga tca ggg gac gga gga tcg Gly Ser Gly Asp Gly Gly Ser 4685	ggc gat ggc gaa atg Gly Asp Gly Glu Met 4690	gag gac gag Glu Asp Glu 4695	14094
ata ccg gaa ctt gtg cac gtg Ile Pro Glu Leu Val His Val 4700	gac gaa gac ttc ttc Asp Glu Asp Phe Phe 4705	tac atg gaa Tyr Met Glu 4710	14139
cac gtt ctc cgc att gcg gca His Val Leu Arg Ile Ala Ala 4715	tgt ctg cac tca ctt Cys Leu His Ser Leu 4720	gtc tcc ctg Val Ser Leu 4725	14184
gcc atg ttg att gcc tac tac Ala Met Leu Ile Ala Tyr Tyr 4730	cac ctc aag gtt cca His Leu Lys Val Pro 4735	ttg gcc atc Leu Ala Ile 4740	14229
ttc aag ccg gaa aaa gag att Phe Lys Arg Glu Lys Glu Ile 4745	gcc cgc cgg ctg gag Ala Arg Arg Leu Glu 4750	ttc gag gga Phe Glu Gly 4755	14274
ttg ttc att gca gag cag ccg Leu Phe Ile Ala Glu Gln Pro 4760	gag gat gac gac ttc Glu Asp Asp Asp Phe 4765	aag tcg cac Lys Ser His 4770	14319
tgg gac aag ctg gta att tcg Trp Asp Lys Leu Val Ile Ser 4775	gcg aaa agt ttc ccg Ala Lys Ser Phe Pro 4780	gtg aac tac Val Asn Tyr 4785	14364

4775	4780	4785	
tgg gac aag ttc gtg aag aag	aag gtg cgc caa aag	tac agc gag	14409
Trp Asp Lys Phe Val Lys Lys	Lys Val Arg Gln Lys	Tyr Ser Glu	
4790	4795	4800	
acc tac gac ttt gat tcg atc	tct aat ctg ctg ggc	atg gag aag	14454
Thr Tyr Asp Phe Asp Ser Ile	Ser Asn Leu Leu Gly	Met Glu Lys	
4805	4810	4815	
agc acg ttc gcg gct cag gag	agc gag gaa acg ggc	atc ttc aag	14499
Ser Thr Phe Ala Ala Gln Glu	Ser Glu Glu Thr Gly	Ile Phe Lys	
4820	4825	4830	
tac atc atg aac atc gac tgg	cgc tat cag gtg tgg	aag gct ggc	14544
Tyr Ile Met Asn Ile Asp Trp	Arg Tyr Gln Val Trp	Lys Ala Gly	
4835	4840	4845	
gtc acc ttc acg gac aac gcc	ttc ctc tac tcg ctg	tgg tac ttc	14589
Val Thr Phe Thr Asp Asn Ala	Phe Leu Tyr Ser Leu	Trp Tyr Phe	
4850	4855	4860	
agc ttc tcg gtg atg ggt aac	ttc aac aac ttc ttc	ttc gcc gcc	14634
Ser Phe Ser Val Met Gly Asn	Phe Asn Asn Phe Phe	Phe Ala Ala	
4865	4870	4875	
cat ctg ctc gat gtg gcc gtg	ggc ttc aag acc ctg	cgc acc atc	14679
His Leu Leu Asp Val Ala Val	Gly Phe Lys Thr Leu	Arg Thr Ile	
4880	4885	4890	
ctg cag tct gtg acc cac aac	ggc aag caa ctg gtg	ctc acc gtg	14724
Leu Gln Ser Val Thr His Asn	Gly Lys Gln Leu Val	Leu Thr Val	
4895	4900	4905	
atg ctg ctt acc atc ata gtg	tac atc tac act gtg	atc gcg ttc	14769
Met Leu Leu Thr Ile Ile Val	Tyr Ile Tyr Thr Val	Ile Ala Phe	
4910	4915	4920	
aac ttc ttc agg aag ttc tac	atc cag gag gag gac	gag gag gtg	14814
Asn Phe Phe Arg Lys Phe Tyr	Ile Gln Glu Glu Asp	Glu Glu Val	
4925	4930	4935	
gac aaa aag tgc cac gac atg	ttg acc tgc ttc gtg	ttc cat ctg	14859
Asp Lys Lys Cys His Asp Met	Leu Thr Cys Phe Val	Phe His Leu	
4940	4945	4950	
tac aag ggt gcg aga gcg ggc	ggg gga ata ggc gac	gag atc ggg	14904
Tyr Lys Gly Ala Arg Ala Gly	Gly Gly Ile Gly Asp	Glu Ile Gly	
4955	4960	4965	
gat cca gat gga gac gac tac	gag gtc tac cgc atc	atc ttc gat	14949
Asp Pro Asp Gly Asp Asp Tyr	Glu Val Tyr Arg Ile	Ile Phe Asp	
4970	4975	4980	
atc acg ttc ttc ttc ttc gtt	att att atc ctg ctg	gcc att atc	14994
Ile Thr Phe Phe Phe Phe Val	Ile Ile Ile Leu Leu	Ala Ile Ile	
4985	4990	4995	
cag ggt ctg atc atc gac gcc	ttc ggc gag ctg cgt	gac caa ctg	15039
Gln Gly Leu Ile Ile Asp Ala	Phe Gly Glu Leu Arg	Asp Gln Leu	

5000	5005	5010	
gag tcg gtg aag gac aac atg	gag tcc aac tgc ttc	atc tgc ggg	15084
Glu Ser Val Lys Asp Asn Met	Glu Ser Asn Cys Phe	Ile Cys Gly	
5015	5020	5025	
atg ggc aag gac ttc ttc gac	ata gta ccg cac ggc	ttc gac acg	15129
Met Gly Lys Asp Phe Phe Asp	Ile Val Pro His Gly	Phe Asp Thr	
5030	5035	5040	
cac gtc cag aag gag cac aac	tta gcc aac tac atg	ttc ttc ctg	15174
His Val Gln Lys Glu His Asn	Leu Ala Asn Tyr Met	Phe Phe Leu	
5045	5050	5055	
atg cat ttg att aac aag ccg	gac acg gag tat acc	ggc cag gag	15219
Met His Leu Ile Asn Lys Pro	Asp Thr Glu Tyr Thr	Gly Gln Glu	
5060	5065	5070	
acg tac gtg tgg aac atg tac	cag cag cgc agc tgg	gac ttc ttc	15264
Thr Tyr Val Trp Asn Met Tyr	Gln Gln Arg Ser Trp	Asp Phe Phe	
5075	5080	5085	
cca gtg gga gac tgc ttc cgc	aag caa tac gag gat	gag ctt tcc	15309
Pro Val Gly Asp Cys Phe Arg	Lys Gln Tyr Glu Asp	Glu Leu Ser	
5090	5095	5100	
ggc gga ggc ggc ggc ggc	taaatactg cggattcgcc	gcgtctgatt	15357
Gly Gly Gly Gly Gly Gly			
5105			
tctgggcaca atcacactgg cactggacgg	tcgttttaaac cgggtaagcc	tatccctaac	15417
cctctcctcg gtctcgattc tacgtgatct	agagggcccg cggttcgaag	gtaagcctat	15477
ccctaaccct ctctcgggtc tcgattctac	gcgtaccggg catcatcacc	atcaccattg	15537
agttttatctg actaaatctt agtttgtatt	gkcatgtttt aatacaatat	gttatgttta	15597
aatatgtttt taataaattt tataaaataa	tttcaacttt tattgtaaca	acattgtcca	15657
tttacacact cctttcaagc gcgtgggac	gatgctcact caaaggcggg	aatacggtta	15717
tccacagaat caggggataa cgcaggaaa	aacatgtgag caaaaggcca	gcaaaaggcc	15777
aggaaccgta aaaaggccgc gttgctggcg	tttttccata ggctccgccc	ccctgacgag	15837
catcacaaaa atcgacgctc aagtcagagg	tggcgaaacc cgacaggact	atnaagatac	15897
caggcgtttc cccctggaag ctccctcctg	gacgggtccaa ggactctcgg	gatccaattt	15957
tgtatcggtg gtttgacaac atctggaatt	tttacctagt caacttttagc	aatgtatttt	16017
aagcaatatc ctacacaatc gtttttatgt	acgtagagga gtacgacctg	tttccaaact	16077
gaaatattga tgacgattct agcacgtata	acaacaaatg ttcttaactc	attttgaaat	16137
aaatctattc attttgaacg aacccttttg	gtcttcgata ttttatttat	tcccgttttag	16197
atcgtcaaga agaacaaatt ttgttttggg	taaataattt attactttcg	aacattaaga	16257
cttgtcatct caaatatcaa ggctgggttag	tcgaattatt tacaagaata	gagcaaaagc	16317
ttgtaaaattt tcggaatacc tttccataat	gtaaaaacag tcattt		16363
<210> 10			
<211> 5109			
<212> PRT			
<213> Drosophila melanogaster			
<400> 10			
Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu			
1 5 10 15			
Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg			
20 25 30			

Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
35 40 45  
Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
50 55 60  
Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
65 70 75 80  
Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
85 90 95  
Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
100 105 110  
Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
115 120 125  
Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
130 135 140  
Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
145 150 155 160  
Gly Asp Gly Leu Ile Pro Val Ser Val Ala Thr Glu Arg Tyr Leu His  
165 170 175  
Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
180 185 190  
Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
195 200 205  
Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
210 215 220  
Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
225 230 235 240  
Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
245 250 255  
Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly Phe  
260 265 270  
Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
275 280 285  
Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
290 295 300  
Glu Ala Ser Ile Ala Thr Thr Thr Phe Cys Leu Arg Gln Glu Lys Asp  
305 310 315 320  
Asp Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser  
325 330 335  
Pro Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu  
340 345 350



Thr Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly  
 355 360 365  
 Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys  
 370 375 380  
 Met Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys  
 385 390 395 400  
 Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile  
 405 410 415  
 Thr Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe  
 420 425 430  
 Gln Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile  
 435 440 445  
 Asn Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln  
 450 455 460  
 Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu  
 465 470 475 480  
 Gly Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Val Asn Ile Ile  
 485 490 495  
 Thr Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly  
 500 505 510  
 Gln Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala  
 515 520 525  
 Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn  
 530 535 540  
 Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu  
 545 550 555 560  
 Gly Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro  
 565 570 575  
 Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Val Ile Ser  
 580 585 590  
 Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys  
 595 600 605  
 Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn  
 610 615 620  
 Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu  
 625 630 635 640  
 Leu Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg  
 645 650 655  
 Val Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met  
 660 665 670

Asp His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly  
 675 680 685  
 Trp Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys  
 690 695 700  
 Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp  
 705 710 715 720  
 Gly Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala  
 725 730 735  
 Leu Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala  
 740 745 750  
 Ile Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys  
 755 760 765  
 Val Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro  
 770 775 780  
 Val Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly  
 785 790 795 800  
 Asp His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu  
 805 810 815  
 Val Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe  
 820 825 830  
 Tyr Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile  
 835 840 845  
 Glu Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val  
 850 855 860  
 Thr Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn  
 865 870 875 880  
 Ile His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp  
 885 890 895  
 Gly Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His  
 900 905 910  
 Phe Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala  
 915 920 925  
 Val Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met  
 930 935 940  
 Asp Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile  
 945 950 955 960  
 Phe Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala  
 965 970 975  
 Val Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu  
 980 985 990

Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	995	1000	1005
Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu		1010	1015	1020
Val	Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg		1025	1030	1035
Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr		1040	1045	1050
Val	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gly	Thr	Glu	Ala	Leu	Leu	Ala		1055	1060	1065
Glu	Ala	Gln	Arg	Leu	Lys	Phe	Ala	Gly	Phe	Arg	Thr	Tyr	Arg	Val		1070	1075	1080
Glu	Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe		1085	1090	1095
Glu	Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala		1100	1105	1110
Asp	Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp		1115	1120	1125
Ala	Phe	Asp	Gly	His	Asn	Val	Thr	Lys	Met	His	Ala	Gly	Ser	Ile		1130	1135	1140
Glu	His	Phe	Gly	Val	Arg	Tyr	Glu	Ala	Gly	Asp	Val	Ile	Gly	Cys		1145	1150	1155
Phe	Ile	Asp	Val	Lys	Glu	Gln	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly		1160	1165	1170
Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp		1175	1180	1185
Val	Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly		1190	1195	1200
Val	Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser		1205	1210	1215
Leu	Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro		1220	1225	1230
Phe	Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys		1235	1240	1245
Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg		1250	1255	1260
Ile	Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His		1265	1270	1275
Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn		1280	1285	1290

Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu
1295						1300					1305			
Phe	Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys
1310						1315					1320			
Asn	Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln
1325						1330					1335			
Met	Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys
1340						1345					1350			
Gly	Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe
1355						1360					1365			
Asp	Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro
1370						1375					1380			
Asn	Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe
1385						1390					1395			
Glu	Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr
1400						1405					1410			
Ser	Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys
1415						1420					1425			
Lys	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser
1430						1435					1440			
Arg	Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr
1445						1450					1455			
Ser	Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val
1460						1465					1470			
Asn	Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn
1475						1480					1485			
Ala	Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu
1490						1495					1500			
Ser	Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp
1505						1510					1515			
Glu	Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe
1520						1525					1530			
Tyr	Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr
1535						1540					1545			
Val	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe
1550						1555					1560			
Asn	Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp
1565						1570					1575			
Tyr	Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val
1580						1585					1590			

Val	Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser
1595						1600					1605			
Gly	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp
1610						1615					1620			
Thr	Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr
1625						1630					1635			
Ser	His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala
1640						1645					1650			
Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu
1655						1660					1665			
Gly	Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro
1670						1675					1680			
Thr	Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys
1685						1690					1695			
Val	Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr
1700						1705					1710			
Ala	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp
1715						1720					1725			
Ser	Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	Arg	Ile
1730						1735					1740			
Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met
1745						1750					1755			
Asp	Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala
1760						1765					1770			
Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys
1775						1780					1785			
Gln	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Glu
1790						1795					1800			
Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile
1805						1810					1815			
Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys
1820						1825					1830			
Asn	Glu	Tyr	Ile	Thr	Pro	Leu	Gly	Ala	Glu	Leu	Lys	Glu	Leu	Tyr
1835						1840					1845			
Ser	Asp	Glu	Glu	Met	Gln	His	Ser	Leu	Arg	Ser	Leu	Val	Thr	Glu
1850						1855					1860			
Ser	Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Glu	Pro	Ile
1865						1870					1875			
Pro	Asp	Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val
1880						1885					1890			

Val Arg 1895	Gln Phe Val Met 1900	Glu Ala Leu Lys Asp 1905	Val Glu Ile
Asn Gln 1910	Val His Asn Arg Asp 1915	Pro Ile Gly Trp Thr 1920	Asn Glu Asn
Leu Phe 1925	Leu Pro Leu Ile Lys 1930	Leu Thr Asp Arg Leu 1935	Leu Leu Val
Gly Val 1940	Leu Thr Asp Glu Asp 1945	Val Gln Arg Leu Leu 1950	Val Met Ile
Asp Pro 1955	Glu Thr Trp Asp Gln 1960	Ala Phe Glu Arg Glu 1965	Gly Lys Asp
Glu His 1970	Arg Lys Gly Leu Leu 1975	Thr Met Lys Met Ala 1980	Glu Gly Ala
Lys Leu 1985	Gln Met Arg Tyr Leu 1990	Leu His His Leu Tyr 1995	Asp Thr Gln
Leu Arg 2000	His Arg Val Glu Ser 2005	Ile Ile Ala Phe Ser 2010	His Asp Phe
Val Gly 2015	Asp Leu Gln Thr Asp 2020	Gln Leu Arg Arg Tyr 2025	Ile Glu Ile
Lys Gln 2030	Ser Asp Leu Pro Ser 2035	Ala Val Ala Ala Lys 2040	Lys Thr Lys
Glu Phe 2045	Arg Cys Pro Pro Arg 2050	Glu Gln Met Asn Gln 2055	Ile Leu Cys
Phe Lys 2060	Asn Leu Glu Pro Asp 2065	Asp Gln Asp Asn Cys 2070	Thr Cys Gly
Leu Glu 2075	Leu Arg Gly Arg Leu 2080	Gly Asp Phe His Asp 2085	Ser Leu Met
Gln Lys 2090	Val Ser Leu Asn Ala 2095	Leu Gln Glu Pro Asp 2100	Gly Val Glu
Gly Thr 2105	Ala Ile Glu Glu Val 2110	Lys Thr Gly Pro Ile 2115	Thr Lys Ile
Tyr Asn 2120	Phe Ile Asn Thr Val 2125	Lys Glu Leu Glu Glu 2130	Gly Pro Lys
Glu Val 2135	Glu Glu Pro Glu Lys 2140	Lys Thr Pro Glu Glu 2145	Val Phe Arg
Lys Val 2150	Leu Ile Lys Thr Ile 2155	Val Ser Trp Ala Glu 2160	Glu Ser Gln
Ile Glu 2165	Asn Pro Lys Leu Val 2170	Arg Glu Met Phe Ser 2175	Leu Leu Leu
Arg Gln 2180	Tyr Asp Thr Val Gly 2185	Glu Leu Val Arg Ala 2190	Leu Glu Lys

Thr	Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met
2195						2200					2205			
Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met
2210						2215					2220			
Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu
2225						2230					2235			
Val	Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile
2240						2245					2250			
Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu
2255						2260					2265			
Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu
2270						2275					2280			
Val	Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu
2285						2290					2295			
Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr
2300						2305					2310			
Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu
2315						2320					2325			
Leu	Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly
2330						2335					2340			
Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr
2345						2350					2355			
Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala
2360						2365					2370			
Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val
2375						2380					2385			
Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu
2390						2395					2400			
Arg	Tyr	Pro	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu
2405						2410					2415			
Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg
2420						2425					2430			
Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly
2435						2440					2445			
Leu	Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile
2450						2455					2460			
Ser	Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala
2465						2470					2475			
Gly	Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu
2480						2485					2490			

Asp	Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr
2495						2500					2505			
Leu	Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile
2510						2515					2520			
Glu	Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg
2525						2530					2535			
Ser	Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys
2540						2545					2550			
Phe	Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser
2555						2560					2565			
Asp	Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val
2570						2575					2580			
Leu	Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe
2585						2590					2595			
Tyr	Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala
2600						2605					2610			
Thr	Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu
2615						2620					2625			
Ala	Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile
2630						2635					2640			
Lys	His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu
2645						2650					2655			
Leu	Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg
2660						2665					2670			
Met	Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val
2675						2680					2685			
Ala	Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu
2690						2695					2700			
Arg	Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr
2705						2710					2715			
Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys
2720						2725					2730			
Tyr	Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser
2735						2740					2745			
Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe
2750						2755					2760			
Asp	Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys
2765						2770					2775			
Ala	Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp
2780						2785					2790			



Tyr	Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln
2795						2800					2805			
Met	Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp
2810						2815					2820			
Thr	Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln
2825						2830					2835			
Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu
2840						2845					2850			
Glu	Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg
2855						2860					2865			
Lys	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu
2870						2875					2880			
Arg	Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu
2885						2890					2895			
Leu	Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro
2900						2905					2910			
Leu	Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile
2915						2920					2925			
Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val	Asp	Met
2930						2935					2940			
Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg
2945						2950					2955			
Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Asn	Glu
2960						2965					2970			
Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln	Leu	Val	Pro
2975						2980					2985			
Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg
2990						2995					3000			
Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu
3005						3010					3015			
His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly	Gly	Ala	Thr
3020						3025					3030			
Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu	Leu	Glu	Lys
3035						3040					3045			
Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu
3050						3055					3060			
Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ala
3065						3070					3075			
Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met
3080						3085					3090			

Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Ile	Ala
3095						3100					3105			
Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu
3110						3115					3120			
Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu	Leu	Arg	Asn
3125						3130					3135			
Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys
3140						3145					3150			
Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr	Leu	Thr	Lys
3155						3160					3165			
Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn
3170						3175					3180			
Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn	Leu	Gln	Asp
3185						3190					3195			
Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr
3200						3205					3210			
Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val	Leu	Thr	Ala
3215						3220					3225			
Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser	Asp	Leu	Leu
3230						3235					3240			
Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu	Ala	Ala	Leu
3245						3250					3255			
Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg	Lys	Tyr
3260						3265					3270			
Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu	Gly	Ser	Cys
3275						3280					3285			
Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro
3290						3295					3300			
His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg	Ile	Ala
3305						3310					3315			
Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys	Met	Glu	Ser
3320						3325					3330			
Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Ala	Glu	Val	Asp	Gln	Phe
3335						3340					3345			
Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His	Ile	Ile	Asp
3350						3355					3360			
Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe	Trp	Trp	Ser
3365						3370					3375			
Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn	His	Val	Thr
3380						3385					3390			

Met Val	Thr Ala Asp His	Met	Asn Pro Leu Leu Arg	Asn Val Leu
3395		3400		3405
Lys Met	Ile Lys Lys Asn Ile	Gly Asn Asp Asn Ala	Pro Trp Met	
3410		3415		3420
Thr Arg	Ile Ala Ala Tyr Thr	Gln Gln Ile Ile Ile	Asn Thr Ser	
3425		3430		3435
Glu Glu	Leu Leu Lys Asp Pro	Phe Leu Pro Leu Ala	Glu Arg Val	
3440		3445		3450
Lys Lys	Arg Thr Glu Asn Met	Leu His Lys Glu Asp	Ser Met Arg	
3455		3460		3465
Gly Phe	Ile Lys Ser Ala Thr	Asp Asp Thr Ser Gln	Val Glu Thr	
3470		3475		3480
Gln Leu	Gln Glu Asp Trp Asn	Leu Leu Val Arg Asp	Ile Tyr Ser	
3485		3490		3495
Phe Tyr	Pro Leu Leu Ile Lys	Tyr Val Asp Leu Gln	Arg Asn His	
3500		3505		3510
Trp Leu	Lys Asp Asn Ile Pro	Glu Ala Glu Glu Leu	Tyr Asn His	
3515		3520		3525
Val Ala	Glu Ile Phe Asn Ile	Trp Ser Lys Ser Gln	Tyr Phe Leu	
3530		3535		3540
Lys Glu	Glu Gln Asn Phe Ile	Ser Ala Asn Glu Ile	Asp Asn Met	
3545		3550		3555
Ala Leu	Ile Met Pro Thr Ala	Thr Arg Arg Ser Ala	Ile Ser Glu	
3560		3565		3570
Gly Ala	Pro Ala Val Gly Gly	Lys Val Lys Lys Lys	Lys Lys Asn	
3575		3580		3585
Arg Asp	Lys Lys Arg Asp Lys	Asp Lys Glu Val Gln	Ala Ser Leu	
3590		3595		3600
Met Val	Ala Cys Leu Lys Arg	Leu Leu Pro Val Gly	Leu Asn Leu	
3605		3610		3615
Phe Ala	Gly Arg Glu Gln Glu	Leu Val Gln His Cys	Lys Asp Arg	
3620		3625		3630
Tyr Leu	Lys Lys Met Pro Glu	Tyr Asp Val Ile Glu	Phe Ala Arg	
3635		3640		3645
Asn Gln	Leu Thr Leu Pro Asp	Lys Leu Asp Pro Ser	Asp Glu Met	
3650		3655		3660
Ser Trp	Gln His Tyr Leu Tyr	Ser Lys Leu Gly Lys	Thr Glu Glu	
3665		3670		3675
Pro Val	Asp Glu Gln Ala Leu	Glu Lys Ala Asn Val	Asn Ser Asn	
3680		3685		3690

Glu Lys	Gly Lys Asp Lys Thr	Gln Glu Thr Val Asp	Arg Ile Val
3695	3700	3705	
Ala Met	Ala Lys Val Leu Phe	Gly Leu His Met Ile	Asp His Pro
3710	3715	3720	
Gln Gln	Gln Ser Lys Asn Val	Tyr Arg Ser Val Val	Ser Ile Gln
3725	3730	3735	
Arg Lys	Arg Ala Val Ile Ala	Cys Phe Arg Gln Thr	Ser Leu His
3740	3745	3750	
Ser Leu	Pro Arg His Arg Ala	Cys Asn Ile Phe Ala	Arg Ser Tyr
3755	3760	3765	
Tyr Glu	Gln Trp Leu Gln Glu	Glu Asn Val Gly Gln	Glu Val Met
3770	3775	3780	
Val Glu	Asp Leu Thr Gln Thr	Phe Glu Asp Ser Glu	Lys Ser Lys
3785	3790	3795	
Lys Glu	Gly Glu Glu Thr Asp	Ser Lys Pro Asp Pro	Leu Thr Gln
3800	3805	3810	
Leu Val	Thr Thr Phe Cys Arg	Gly Ala Met Thr Glu	Arg Ser Gly
3815	3820	3825	
Ala Leu	Gln Glu Asp Leu Leu	Tyr Met Ser Tyr Ala	Gln Ile Ala
3830	3835	3840	
Ala Lys	Ser Thr Gly Lys Glu	Glu Glu Glu Gly Gly	Asp Glu Glu
3845	3850	3855	
Gly Gly	Glu Gly Gly Glu Glu	Ala Glu Gly Thr Ser	Ile His Glu
3860	3865	3870	
Gln Glu	Met Glu Lys Gln Lys	Leu Leu Phe His Gln	Ala Arg Leu
3875	3880	3885	
Ser Asn	Arg Gly Val Ala Glu	Met Val Leu Leu His	Val Ser Ala
3890	3895	3900	
Ser Lys	Gly Ile Pro Ser Glu	Met Val Met Thr Thr	Leu Asn Leu
3905	3910	3915	
Gly Ile	Ala Ile Leu Arg Gly	Gly Asn Ile Asp Ile	Gln Met Gly
3920	3925	3930	
Met Leu	Asn His Leu Lys Glu	Lys Lys Asp Val Gly	Phe Phe Thr
3935	3940	3945	
Ser Ile	Ala Gly Leu Met Asn	Ser Cys Ser Val Leu	Asp Leu Asp
3950	3955	3960	
Ala Phe	Glu Arg Asn Thr Lys	Ala Glu Gly Leu Gly	Val Gly Ser
3965	3970	3975	
Glu Gly	Ala Ala Gly Glu Lys	Asn Met His Asp Ala	Glu Phe Thr
3980	3985	3990	

Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly	His	Asn
3995						4000					4005			
Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn	Thr	Thr
4010						4015					4020			
Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu	Arg	Leu
4025						4030					4035			
Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser	Lys	Glu
4040						4045					4050			
Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala	Ile	Glu
4055						4060					4065			
Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	Val	Ile	Gln	Gly
4070						4075					4080			
Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg	Leu	Trp
4085						4090					4095			
Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met	Gln	Asp
4100						4105					4110			
Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys	Glu	Leu
4115						4120					4125			
Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser	Met	Leu
4130						4135					4140			
Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met	Val	Asp
4145						4150					4155			
Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu	Lys	Tyr
4160						4165					4170			
Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu	Ser	Pro	Ser
4175						4180					4185			
Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val	Thr	Pro	Lys
4190						4195					4200			
Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr	Thr	Pro	Glu
4205						4210					4215			
Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn	His	Glu	Gly
4220						4225					4230			
Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His	Glu	Pro	Ser
4235						4240					4245			
Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser
4250						4255					4260			
Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe	Leu	Glu	Thr
4265						4270					4275			
Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu	Gly	Arg	Ile
4280						4285					4290			

Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu
4295						4300					4305			
Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro	Gln	Ile	Arg
4310						4315					4320			
Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr	Glu	Gly	Gly
4325						4330					4335			
Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys	Glu	Asp	Ala
4340						4345					4350			
Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala	Thr	Asp	Asp
4355						4360					4365			
Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser	Ser	Tyr	Met
4370						4375					4380			
Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro	Ile	Arg	Arg
4385						4390					4395			
Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly	Val	His	Met
4400						4405					4410			
Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val	Met	Gln	Thr
4415						4420					4425			
Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys	Ile	Ile	Phe
4430						4435					4440			
Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys	Val	Val	Arg
4445						4450					4455			
Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly	Pro	Ala	Pro
4460						4465					4470			
Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr	Phe	Gly	Arg
4475						4480					4485			
Ala	Leu	Pro	Pro	Leu	Ser	Leu	Glu	Glu	Pro	Pro	Gly	Thr	Val	Gln
4490						4495					4500			
Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly	Met	Tyr	Lys
4505						4510					4515			
Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met	Glu	Glu	Gly
4520						4525					4530			
Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser	Gly	Glu	Leu
4535						4540					4545			
Val	Glu	Gly	Glu	Pro	His	Gln	Gly	Pro	Ile	Ser	Ile	Val	Asp	Leu
4550						4555					4560			
Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu	Arg	Gln	Glu
4565						4570					4575			
Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile	Glu	Ala	Glu
4580						4585					4590			

Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro	Ala	Val	His
4595						4600					4605			
Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val	Ser	Phe	Leu
4610						4615					4620			
Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala
4625						4630					4635			
Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val	Thr	Ser	Phe
4640						4645					4650			
Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu	Ile	Leu	Gly
4655						4660					4665			
Ser	Gly	Pro	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser	Gly	Phe	Gly
4670						4675					4680			
Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met	Glu	Asp	Glu
4685						4690					4695			
Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu
4700						4705					4710			
His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu	Val	Ser	Leu
4715						4720					4725			
Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu	Ala	Ile
4730						4735					4740			
Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu	Phe	Glu	Gly
4745						4750					4755			
Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe	Lys	Ser	His
4760						4765					4770			
Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr
4775						4780					4785			
Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys	Tyr	Ser	Glu
4790						4795					4800			
Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly	Met	Glu	Lys
4805						4810					4815			
Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly	Ile	Phe	Lys
4820						4825					4830			
Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly
4835						4840					4845			
Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe
4850						4855					4860			
Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala
4865						4870					4875			
His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile
4880						4885					4890			

Leu Gln Ser Val Thr His Asn Gly Lys Gln Leu Val Leu Thr Val  
 4895 4900 4905  
 Met Leu Leu Thr Ile Ile Val Tyr Ile Tyr Thr Val Ile Ala Phe  
 4910 4915 4920  
 Asn Phe Phe Arg Lys Phe Tyr Ile Gln Glu Glu Asp Glu Glu Val  
 4925 4930 4935  
 Asp Lys Lys Cys His Asp Met Leu Thr Cys Phe Val Phe His Leu  
 4940 4945 4950  
 Tyr Lys Gly Ala Arg Ala Gly Gly Gly Ile Gly Asp Glu Ile Gly  
 4955 4960 4965  
 Asp Pro Asp Gly Asp Asp Tyr Glu Val Tyr Arg Ile Ile Phe Asp  
 4970 4975 4980  
 Ile Thr Phe Phe Phe Phe Val Ile Ile Ile Leu Leu Ala Ile Ile  
 4985 4990 4995  
 Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Leu  
 5000 5005 5010  
 Glu Ser Val Lys Asp Asn Met Glu Ser Asn Cys Phe Ile Cys Gly  
 5015 5020 5025  
 Met Gly Lys Asp Phe Phe Asp Ile Val Pro His Gly Phe Asp Thr  
 5030 5035 5040  
 His Val Gln Lys Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu  
 5045 5050 5055  
 Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu  
 5060 5065 5070  
 Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp Asp Phe Phe  
 5075 5080 5085  
 Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Glu Leu Ser  
 5090 5095 5100  
 Gly Gly Gly Gly Gly Gly  
 5105

<210> 11  
 <211> 20  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer A-F1

<220>  
 <221> misc\_feature  
 <222> (6)  
 <223> n = a or g



<220>  
<221> unsure  
<222> (9)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (10)  
<223> n = c or t

<220>  
<221> unsure  
<222> (12)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (15)  
<223> n = c or t

<400> 11  
cctgangcnn tnaanatgat

20

<210> 12  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer A-F2

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = a or g

<220>  
<221> unsure  
<222> (12)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (13)  
<223> n = c or t

<220>  
<221> unsure  
<222> (15)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (18)  
<223> n = c or t

<400> 12  
gatacctaang tnnatngangt

20

<210> 13  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer A-F3

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (15)  
<223> n = a or g

<220>  
<221> misc\_feature  
<222> (18)  
<223> n = c or t

<400> 13  
aagtgggtant tnganttnga

20

<210> 14  
<211> 23  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer A-R1

<220>  
<221> misc\_feature  
<222> (6)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (9)

<223> n = a or g

<220>

<221> misc\_feature

<222> (12)

<223> n = a or g

<220>

<221> misc\_feature

<222> (18)

<223> n = c or t

<220>

<221> unsure

<222> (21)

<223> n = a, c, g, or t

<400> 14

tcgaantcna antaccantt ncc

23

<210> 15

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> PCR primer A-R2

<220>

<221> misc\_feature

<222> (6)

<223> n = c or t

<220>

<221> misc\_feature

<222> (9)

<223> n = a or g

<220>

<221> unsure

<222> (12)

<223> n = a, c, g, or t

<220>

<221> misc\_feature

<222> (15)

<223> n = c or t

<220>

<221> misc\_feature

<222> (18)

<223> n = c or t

<400> 15  
aatggntcnt anccntcntg

20

<210> 16  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer D-F1

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = c or t

<220>  
<221> unsure  
<222> (15)  
<223> n = a, c, g, or t

<220>  
<221> misc\_feature  
<222> (16)  
<223> n = a or t

<220>  
<221> misc\_feature  
<222> (17)  
<223> n = c or g

<220>  
<221> unsure  
<222> (18)  
<223> n = a, c, g, or t

<400> 16  
gagcaggang angtnnnntt

20

<210> 17  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer D-F2

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = a or g

<220>  
<221> unsure  
<222> (12)  
<223> n = a, c, g, or t

<220>  
<221> misc\_feature  
<222> (15)  
<223> n = c or t

<220>  
<221> unsure  
<222> (18)  
<223> n = a, c, g, or t

<400> 17  
gctgctgang gnttnggnaa

20

<210> 18  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer D-F3

<220>  
<221> misc\_feature  
<222> (6)  
<223> n = a or g

<220>  
<221> unsure  
<222> (9)  
<223> n = a, c, g, or t

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = c or t

<400> 18  
ggtgangcnt gntggtggac

20

<210> 19  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer D-R1

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = a or g

<220>  
<221> unsure  
<222> (12)  
<223> n = a, c, g, or t

<220>  
<221> misc\_feature  
<222> (15)  
<223> n = c or t

<220>  
<221> unsure  
<222> (18)  
<223> n = a, c, g, or t

<400> 19  
gtccaccanc angcntcncc

20

<210> 20  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer D-R2

<220>  
<221> misc\_feature  
<222> (5)  
<223> n = g or t

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = c or t

<220>  
<221> unsure  
<222> (15)

<223> n = a, c, g, or t

<220>

<221> misc\_feature

<222> (18)

<223> n = c or t

<400> 20

actentacnt tntcncntc

20

<210> 21

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> PCR primer D-R3

<220>

<221> misc\_feature

<222> (11)

<223> n = a or g

<220>

<221> misc\_feature

<222> (12)

<223> n = a or g

<220>

<221> misc\_feature

<222> (15)

<223> n = c or t

<220>

<221> misc\_feature

<222> (18)

<223> n = a or g

<400> 21

ggtattgtta nncantcntc

20

<210> 22

<211> 23

<212> DNA

<213> artificial sequence

<220>

<223> PCR primer D-R4

<220>

<221> misc\_feature

<222> (9)

<223> n = a, c, g or t

<220>  
 <221> misc\_feature  
 <222> (12)  
 <223> n = c or t

<220>  
 <221> misc\_feature  
 <222> (15)  
 <223> n = c or t

<220>  
 <221> misc\_feature  
 <222> (18)  
 <223> n = c or t

<220>  
 <221> misc\_feature  
 <222> (21)  
 <223> n = a or g

<400> 22  
 ttttagtacnc cntcntcntg naa 23

<210> 23  
 <211> 24  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer WL3

<400> 23  
 cacacactgc gacagatcag gcgg 24

<210> 24  
 <211> 26  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer WL4

<400> 24  
 gcaatattct ccaggaagca gtgccg 26

<210> 25  
 <211> 38  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer pHVN3-PacI



<400> 25  
 gccaaagttaa ttaaccatgg cggaagcaga ggggggag 38

<210> 26  
 <211> 41  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer pRhCl-PmeI

<400> 26  
 ggactcgttt aaacgattct cccatgaggt cttcgattg c 41

<210> 27  
 <211> 20  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer E-F1

<220>  
 <221> misc\_feature  
 <222> (9)  
 <223> n = a, c, g or t

<220>  
 <221> misc\_feature  
 <222> (12)  
 <223> n = a, c or t

<220>  
 <221> misc\_feature  
 <222> (15)  
 <223> n = a, c, g or t

<220>  
 <221> misc\_feature  
 <222> (18)  
 <223> n = c or t

<400> 27  
 ggaggtggna tnggnganga 20

<210> 28  
 <211> 20  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer E-F2

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (15)  
<223> n = c or t

<220>  
<221> misc\_feature  
<222> (18)  
<223> n = a, c, g or t

<400> 28  
atcatcgang cnttnggnga

20

<210> 29  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer E-R1

<220>  
<221> misc\_feature  
<222> (3)  
<223> n = a or g

<220>  
<221> misc\_feature  
<222> (6)  
<223> n = a or g

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (15)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (18)  
<223> n = a or g

<400> 29  
aancantcnc cnacnggnaa

20

<210> 30  
<211> 20  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer E-R2

<220>  
<221> misc\_feature  
<222> (3)  
<223> n = a, c, g or t

<220>  
<221> misc\_feature  
<222> (6)  
<223> n = a or g

<220>  
<221> misc\_feature  
<222> (9)  
<223> n = a or g

<220>  
<221> misc\_feature  
<222> (12)  
<223> n = a or g

<220>  
<221> misc\_feature  
<222> (18)  
<223> n = a or g

<400> 30  
acnggnaana antcccanca

20

<210> 31  
<211> 26

<212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer F-R1  
  
 <400> 31  
 ccctcttgag aacttgcagc tgtcac 26  
  
  
 <210> 32  
 <211> 27  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer F-R2  
  
 <400> 32  
 cgtccggtgt ccagatccag ttccgcc 27  
  
  
 <210> 33  
 <211> 27  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer F-R3  
  
 <400> 33  
 gatgaacagt ccaccaacaa gcttcac 27  
  
  
 <210> 34  
 <211> 26  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer G-F1  
  
 <400> 34  
 gctggaaagc gtcaaggaag acatgg 26  
  
  
 <210> 35  
 <211> 26  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer G-F2  
  
 <400> 35  
 gcggtatcgg caaagattat ttcgac 26  
  
  
 <210> 36  
 <211> 25

<212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer G-F3  
  
 <400> 36  
 gtgccgcatg gtttcgacac tcacg 25  
  
 <210> 37  
 <211> 40  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer pRgN-PacI  
  
 <400> 37  
 gccaaagttaa ttaacgatgg ccgacagcga gggcagttcg 40  
  
 <210> 38  
 <211> 38  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer pRgC-PmeI  
  
 <400> 38  
 ggactcgttt aaacgagacg cctcctccgc cgccgagc 38  
  
 <210> 39  
 <211> 82  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> vector MCS with PacI and PmeI sites inserted between BamHI and XbaI  
  
 <400> 39  
 ggatccttaa ttaacggtcc ggtttaaacc gggtaagcct atccctaacc ctctcctcgg 60  
 tctcgattct acgtgatcta ga 82  
  
 <210> 40  
 <211> 29  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CMA-DR1  
  
 <400> 40  
 gctggatgca cagtccacca acaagcttc 29  
  
 <210> 41

<211> 27  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CMA-DR2  
  
 <400> 41  
 caatgttcgg tgtccagatc cagttcc 27  
  
 <210> 42  
 <211> 30  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CMA-DR3  
  
 <400> 42  
 gacgggtaca cactgagaca agtcgggtgg 30  
  
 <210> 43  
 <211> 26  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CMA-EF1  
  
 <400> 43  
 ctgcggcatc ggcaaagatt atttcg 26  
  
 <210> 44  
 <211> 25  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CMA-EF2  
  
 <400> 44  
 ccgcacgggtt ttgacacgca cgttc 25  
  
 <210> 45  
 <211> 26  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CMA-EF3  
  
 <400> 45  
 ccggccaaga aacgtacgtc tggaac 26  
  
 <210> 46

<211> 24  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CPH-DR1  
  
 <400> 46  
 ccgaagcaca tcgccaccaa acac 24  
  
 <210> 47  
 <211> 25  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CPH-DR2  
  
 <400> 47  
 cctgtgccat aaggctgaac ggacc 25  
  
 <210> 48  
 <211> 29  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CPH-DR3  
  
 <400> 48  
 cgtcaccaac tcgcaccttc tcaccctcc 29  
  
 <210> 49  
 <211> 34  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CPH-EF1  
  
 <400> 49  
 ggaagacatg gagtccaact gtttcatttg tggc 34  
  
 <210> 50  
 <211> 31  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CPH-EF2  
  
 <400> 50  
 gtgccgcatg gtttcgatac tcatgtgcag c 31  
  
 <210> 51

<211> 35  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer CPH-EF3  
  
 <400> 51  
 gcataatctc gctaattaca tggtcttcct catgc 35  
  
  
 <210> 52  
 <211> 40  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer pRCMAN-PacI  
  
 <400> 52  
 gccaaagttaa ttaacgatgg ccgacagcga gggaagttcg 40  
  
  
 <210> 53  
 <211> 38  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer pRCMAC-PmeI  
  
 <400> 53  
 gaactcgttt aaacgagacg cctcctccgc cgccaage 38  
  
  
 <210> 54  
 <211> 41  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer pRCPHN-PacI  
  
 <400> 54  
 gccaaagttaa ttaacaatgg cggatagtga gggtaggatct g 41  
  
  
 <210> 55  
 <211> 40  
 <212> DNA  
 <213> artificial sequence  
  
 <220>  
 <223> PCR primer pRCPHC-PmeI  
  
 <400> 55  
 gaagtcgttt aaacgagcca ccaccgcctc ctaactcatc 40  
  
  
 <210> 56



<211> 5126  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 56

Met	Ala	Glu	Ala	Glu	Gly	Gly	Ser	Glu	Gln	Asp	Asp	Val	Ser	Phe	Leu	1	5	10	15
Arg	Thr	Glu	Asp	Met	Val	Thr	Leu	Ser	Cys	Thr	Ala	Thr	Gly	Glu	Arg	20	25	30	
Val	Cys	Leu	Ala	Ala	Glu	Gly	Phe	Gly	Asn	Arg	His	Cys	Phe	Leu	Glu	35	40	45	
Asn	Ile	Ala	Asp	Lys	Asn	Val	Pro	Pro	Asp	Leu	Ser	Gln	Cys	Val	Phe	50	55	60	
Val	Ile	Glu	Gln	Ala	Leu	Ser	Val	Arg	Ala	Leu	Gln	Glu	Leu	Val	Thr	65	70	75	80
Ala	Ala	Gly	Ser	Glu	Thr	Gly	Lys	Gly	Thr	Gly	Ser	Gly	His	Arg	Thr	85	90	95	
Leu	Leu	Tyr	Gly	Asn	Ala	Ile	Leu	Leu	Arg	His	His	Asn	Ser	Asp	Met	100	105	110	
Tyr	Leu	Ala	Cys	Leu	Ser	Thr	Ser	Ser	Ser	Asn	Asp	Lys	Leu	Ser	Phe	115	120	125	
Asp	Val	Gly	Leu	Gln	Glu	His	Ser	Gln	Gly	Glu	Ala	Cys	Trp	Trp	Thr	130	135	140	
Val	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu	Gly	Glu	Lys	Val	Arg	Val	145	150	155	160
Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ala	Thr	Glu	Arg	Tyr	Leu	His	165	170	175	
Thr	Thr	Lys	Glu	Asn	Glu	Gln	Ser	Ile	Val	Asn	Ala	Ser	Phe	His	Val	180	185	190	
Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr	Gly	Ile	Ser	Arg	Met	Lys	195	200	205	
Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val	Leu	Arg	Phe	Phe	His	Gly	210	215	220	
Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	Trp	Gly	Arg	Glu	Ala	Gly	225	230	235	240
Gln	Asn	Ile	Val	Ile	Tyr	Glu	Gly	Gly	Val	Val	Met	Ala	Gln	Ala	Arg	245	250	255	
Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe	260	265	270	
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg	275	280	285	
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu				

290						295						300					
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Ser	Trp	Gln	Glu	Lys	Asp	Asp		
305					310					315					320		
Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	Pro		
				325					330					335			
Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	Thr		
			340					345					350				
Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val		
		355					360						365				
Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met		
	370					375					380						
Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	Thr		
385					390					395					400		
Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	Thr		
				405					410					415			
Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	Gln		
			420					425					430				
Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn		
		435					440					445					
Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn		
	450					455					460						
Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly		
465					470					475					480		
Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	Thr		
			485						490					495			
Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	Gln		
			500					505					510				
Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	Ile		
		515					520					525					
Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn	Arg		
	530					535					540						
Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	Gly		
545					550					555				560			
Ser	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro	Glu		
				565					570					575			
Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser	Leu		
			580					585					590				
Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys	Ser		
		595					600					605					
Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn	Ile		

610					615					620					
Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu	Leu
625					630					635					640
Val	Asp	His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg	Val
				645					650					655	
Asp	Gly	Ser	Ser	Met	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met	Asp
			660					665					670		
His	Ile	Glu	Gln	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	Gly	Trp
		675					680					685			
Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys	Trp
	690					695					700				
Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp	Gly
705					710					715					720
Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala	Leu
				725					730					735	
Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala	Ile
			740					745					750		
Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys	Val
	755						760					765			
Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val
	770					775					780				
Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly	Asp
785						790					795				800
His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu	Val
				805					810					815	
Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe	Tyr
			820					825					830		
Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile	Glu
		835					840					845			
Asp	Asp	Thr	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Thr	Gly	Val	Thr
	850					855					860				
Leu	Pro	Ser	Ser	Val	Asp	Gln	Ile	Lys	Glu	Lys	Leu	Ala	Glu	Asn	Ile
865						870					875				880
His	Glu	Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Ser	Trp	Gly
				885					890					895	
Glu	His	Arg	Asp	Asp	Tyr	His	Arg	Ile	His	Pro	Cys	Leu	Thr	His	Phe
			900					905					910		
Glu	Lys	Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Asn	Gln	Leu	Ala	Val
		915					920					925			
Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met	Asp

930	935	940
Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe 945 950 955 960		
Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val 965 970 975		
Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn 980 985 990		
Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr 995 1000 1005		
Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val 1010 1015 1020		
Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp 1025 1030 1035		
Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys 1040 1045 1050		
Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg 1055 1060 1065		
Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu 1070 1075 1080		
Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu 1085 1090 1095		
Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp 1100 1105 1110		
Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala 1115 1120 1125		
Phe Asp Gly His Asn Glu Glu Lys Val Tyr Gly Gly Val Ser Glu 1130 1135 1140		
Ser Phe Gly Lys Gln Cys Gly Pro Gly Asp Ile Val Gly Val Phe 1145 1150 1155		
Leu Asp Leu Ala Asp His Thr Ile Ser Phe Ser Leu Asn Gly Glu 1160 1165 1170		
Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala Asp Val 1175 1180 1185		
Thr Ala Glu Gly Val Gly Phe Val Pro Ala Cys Thr Leu Gly Val 1190 1195 1200		
Gly Gln Lys Ala Arg Leu Ile Tyr Gly Gln Asp Val Asp Ser Leu 1205 1210 1215		
Lys Phe Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr Glu Pro Phe 1220 1225 1230		
Cys Val Asn Met Arg Arg Pro Val Thr His Trp Tyr Thr Lys Asp		

1235	1240	1245
Gln Pro Ile Phe Glu Asn Thr 1250	Glu Glu Met Pro Asp 1255	Cys Arg Ile 1260
Asp Val Thr Arg Ile Pro Gly 1265	Gly Ala Asp Thr Pro 1270	Pro His Leu 1275
Lys Ile Ser His Asn Thr Phe 1280	Glu Thr Met Glu Lys 1285	Ala Asn Trp 1290
Glu Phe Leu Arg Leu Ser Leu 1295	Pro Val Thr Cys Met 1300	Gly Glu Phe 1305
Ile Ser Glu Gln Glu Lys Ala 1310	Arg Arg Trp Asp Glu 1315	Ile Lys Asn 1320
Arg Gln Tyr Arg Leu Met Arg 1325	Glu Ala Glu Ile Ala 1330	Ala Gln Met 1335
Gln Val Gln Thr Gln Ala Ala 1340	His Met Asp His Met 1345	Leu Lys Gly 1350
Gly Phe Asn Met Asn Asp Ile 1355	Lys Gly Leu Thr Arg 1360	Asn Phe Asp 1365
Glu His Ala Asp Ala Glu Ala 1370	Asp His Met Met Arg 1375	Gly Pro Asn 1380
Arg Pro Pro Arg Lys Gly Ser 1385	Leu Thr Arg Asn Ile 1390	Thr Phe Glu 1395
Thr Asp Met Ser Ala Ala Leu 1400	Asp Glu Met Gln Arg 1405	Ser Thr Ser 1410
Val Leu Asp Met Asn Gly Leu 1415	Gly Glu Glu Met Asp 1420	Asp Lys Lys 1425
Lys Arg Gly Arg Ser Pro Phe 1430	Lys Phe Phe Ser Lys 1435	Lys Ser Arg 1440
Asp Gln Ser Arg Glu Lys Met 1445	Gly Ala Arg Thr Leu 1450	Asp Thr Ser 1455
Leu Glu Arg Arg Asn Thr Val 1460	Ala His Gly Arg Asn 1465	Val Val Asn 1470
Gln Gln Met Thr Thr Arg Ala 1475	Pro Thr Leu Arg Leu 1480	Asn Asn Ala 1485
Glu Ile Pro Pro Ser Pro Val 1490	Pro Gln Gly Pro Lys 1495	Gln Leu Ser 1500
Gly Ser Asn Leu Gly Gln Gln 1505	Pro Val Glu Thr Ser 1510	Gly Asp Glu 1515
Met Phe Asp Ala Glu Cys Leu 1520	Lys Leu Ile Asn Glu 1525	Tyr Phe Tyr 1530
Gly Val Arg Ile Phe Pro Gly 1535	Gln Asp Pro Thr His 1540	Val Tyr Val 1545

1535	1540	1545
Gly Trp Val Thr Thr Gln Tyr	His Leu His Ser Arg	Glu Phe Asn
1550	1555	1560
Lys Asn Lys Val Arg Arg Gly	Ser Val Tyr Ile Glu	Asp Asp Tyr
1565	1570	1575
Glu Met Ala Ile Glu Arg Ile	Asp Arg Gln Ser Cys	Tyr Val Val
1580	1585	1590
Arg Ala Asp Glu Leu Phe Asn	Glu Val Thr Gln Asp	Ala Ser Gly
1595	1600	1605
Lys Gly Ala Ser Gln Gly Met	Phe Val Gly Cys Phe	Val Asp Thr
1610	1615	1620
Ala Thr Gly Ile Ile Arg Phe	Thr Cys Glu Gly Lys	Asp Thr Ser
1625	1630	1635
His Arg Trp Met Met Glu Pro	Asp Thr Lys Leu Phe	Pro Ala Ile
1640	1645	1650
Phe Val Glu Ala Thr Ser Lys	Glu Ile Leu Gln Ile	Glu Leu Gly
1655	1660	1665
Arg Thr Pro Thr Thr Leu Pro	Leu Ser Ala Ala Val	Leu Pro Thr
1670	1675	1680
Ser Asp Lys His Ile Asn Pro	Gln Ser Pro Pro Arg	Leu Lys Val
1685	1690	1695
Gln Cys Leu Arg Pro His Gln	Trp Ala Arg Val Pro	Asn Thr Ala
1700	1705	1710
Leu Gln Val His Ala Leu Lys	Leu Ser Asp Val Arg	Gly Trp Ser
1715	1720	1725
Met Leu Cys Glu Asp Pro Val	Ser Met Leu Ala Leu	His Ile Pro
1730	1735	1740
Glu Glu Asp Arg Cys Ile Asp	Ile Leu Glu Leu Ile	Glu Met Asp
1745	1750	1755
Lys Leu Leu Ser Phe His Ala	His Ser Leu Thr Leu	Tyr Ala Ala
1760	1765	1770
Leu Cys Tyr Gln Ser Asn Tyr	Arg Ala Ala His Ala	Leu Cys Gln
1775	1780	1785
His Val Asp Gln Lys Gln Leu	Leu Tyr Ala Ile Arg	Ser Glu Tyr
1790	1795	1800
Met Ser Gly Pro Leu Arg Gln	Gly Phe Tyr Asp Leu	Leu Ile Ala
1805	1810	1815
Leu His Leu Glu Ser His Ala	Thr Thr Met Glu Val	Cys Lys Asn
1820	1825	1830
Glu Tyr Ile Thr Pro Leu Gly	Ala Glu Leu Lys Glu	Leu Tyr Ser

1835	1840	1845
Asp Glu 1850	Glu Met Gln His Ser 1855	Leu Arg Ser Leu Val 1860
Val Arg 1865	Pro Gln Leu Arg Met 1870	Thr Glu Ile Thr Pro 1875
Ala Thr 1880	Ser Ser Met Pro Ser 1885	Val Ser Ser Glu Pro 1890
Ile Asp 1895	Gln Leu Tyr Ser Pro 1900	Lys Phe Pro Leu Glu 1905
Gln Phe 1910	Val Met Glu Ala Leu 1915	Lys Asp Ala Val Glu 1920
Val His 1925	Asn Arg Asp Pro Ile 1930	Gly Trp Thr Asn Glu 1935
Leu Pro 1940	Leu Ile Lys Leu Thr 1945	Asp Arg Leu Leu Leu 1950
Leu Thr 1955	Asp Glu Asp Val Gln 1960	Arg Leu Leu Val Met 1965
Glu Thr 1970	Trp Asp Gln Ala Phe 1975	Glu Arg Glu Gly Lys 1980
Arg Lys 1985	Gly Leu Leu Thr Met 1990	Lys Met Ala Glu Gly 1995
Gln Met 2000	Cys Tyr Leu Leu His 2005	His Leu Tyr Asp Thr 2010
His Arg 2015	Val Glu Ser Ile Ile 2020	Ala Phe Ser His Asp 2025
Asp Leu 2030	Gln Thr Asp Gln Leu 2035	Arg Arg Tyr Ile Glu 2040
Ser Asp 2045	Leu Pro Ser Ala Val 2050	Ala Ala Lys Lys Thr 2055
Arg Cys 2060	Pro Pro Arg Glu Gln 2065	Met Asn Gln Ile Leu 2070
Asn Leu 2075	Glu Pro Asp Asp Gln 2080	Asp Asn Cys Thr Cys 2085
Leu Arg 2090	Gly Arg Leu Gly Asp 2095	Phe His Asp Ser Leu 2100
Val Ser 2105	Leu Asn Ala Leu Gln 2110	Glu Pro Asp Gly Val 2115
Ala Ile 2120	Glu Glu Val Lys Thr 2125	Gly Pro Ile Thr Lys 2130
Phe Ile	Asn Thr Val Lys Glu	Leu Glu Glu Gly Pro
		Lys Glu Val

2135		2140		2145
Glu Glu Pro Glu Lys Lys Thr	Pro Glu Glu Val Phe	Arg Lys Val		
2150	2155	2160		
Leu Ile Lys Thr Ile Val Ser	Trp Ala Glu Glu Ser	Gln Ile Glu		
2165	2170	2175		
Asn Pro Lys Leu Val Arg Glu	Met Phe Ser Leu	Leu Arg Gln		
2180	2185	2190		
Tyr Asp Thr Val Gly Glu Leu	Val Arg Ala Leu Glu	Lys Thr Tyr		
2195	2200	2205		
Val Ile Asn Thr Arg Ala Arg	Asp Asp Val Ala Glu	Met Trp Val		
2210	2215	2220		
Gly Leu Ser Gln Ile Arg Ala	Leu Leu Pro Val Gln	Met Ser Gln		
2225	2230	2235		
Glu Glu Glu Glu Leu Met Arg	Lys Arg Leu Trp Lys	Leu Val Asn		
2240	2245	2250		
Asn Ala Thr Phe Phe Gln His	Pro Asp Leu Ile Arg	Ile Leu Arg		
2255	2260	2265		
Val His Glu Asn Val Met Ala	Val Met Met Asn Thr	Ile Gly Arg		
2270	2275	2280		
Arg Ala Gln Ala Gln Ser Asp	Ala Pro Thr Gln Ser	Glu Val Ala		
2285	2290	2295		
Glu Gly Ala Pro Ser Lys Glu	Lys Asp Thr Ser His	Glu Met Val		
2300	2305	2310		
Val Ala Cys Cys Arg Phe Leu	Cys Tyr Phe Cys Arg	Thr Gly Arg		
2315	2320	2325		
Gln Asn Gln Lys Ala Met Phe	Asp His Phe Asp Phe	Leu Leu Asp		
2330	2335	2340		
Asn Ala Asn Ile Leu Leu Ala	Arg Pro Ser Leu Arg	Gly Ser Thr		
2345	2350	2355		
Pro Leu Asp Val Ala Tyr Ser	Ser Leu Met Glu Asn	Thr Glu Leu		
2360	2365	2370		
Ala Leu Ala Leu Arg Glu His	Tyr Leu Glu Lys Ile	Ala Val Tyr		
2375	2380	2385		
Leu Ser Arg Cys Gly Leu Gln	Ser Asn Ser Glu Leu	Val Glu Lys		
2390	2395	2400		
Gly Tyr Pro Asp Leu Gly Trp	Asp Pro Val Glu Gly	Glu Arg Tyr		
2405	2410	2415		
Leu Asp Phe Leu Arg Tyr Cys	Val Trp Val Asn Gly	Glu Ser Val		
2420	2425	2430		
Glu Glu Asn Ala Asn Leu Val	Ile Arg Leu Leu Ile	Arg Arg Pro		



2435		2440		2445
Glu Cys Leu Gly Pro Ala	Leu Arg Gly Glu Gly	Glu Gly Leu Phe		
2450	2455	2460		
Arg Ala Ile Val Glu Ala	Asn Arg Met Ser Glu	Arg Ile Ser Asp		
2465	2470	2475		
Arg Cys Lys Met Gln Asp	Glu Ala Glu Gly Thr	Ile Ala Gly Leu		
2480	2485	2490		
Asn Phe Thr His Pro Leu	Pro Glu Gly Glu Glu	Asp Glu Asp Tyr		
2495	2500	2505		
Ile Asp Thr Gly Ala Ala	Ile Leu Asn Phe Tyr	Cys Thr Leu Val		
2510	2515	2520		
Asp Leu Leu Gly Arg Cys	Ala Pro Asp Ala Ser	Val Ile Glu Gln		
2525	2530	2535		
Gly Lys Asn Glu Ser Leu	Arg Ala Arg Ala Ser	Leu Arg Ser Leu		
2540	2545	2550		
Val Pro Leu Glu Asp Leu	Gln Gly Val Leu Ser	Leu Lys Phe Thr		
2555	2560	2565		
Leu Ser Gln Thr Ala Pro	Gly Glu Glu Lys Pro	Lys Ser Asp Met		
2570	2575	2580		
Pro Ser Gly Leu Leu Pro	Asn Asn Lys Gln Ser	Ile Val Leu Phe		
2585	2590	2595		
Leu Glu Arg Val Tyr Gly	Ile Glu Ala Gln Asp	Leu Phe Tyr Arg		
2600	2605	2610		
Leu Leu Glu Asp Ala Phe	Leu Pro Asp Leu Arg	Thr Ala Thr Ile		
2615	2620	2625		
Leu Asp Lys Ser Asp Gly	Ser Glu Ser Asp Met	Ala Leu Ala Met		
2630	2635	2640		
Asn Arg Tyr Ile Gly Asn	Ser Ile Leu Pro Leu	Leu Ile Lys His		
2645	2650	2655		
Ser Lys Phe Tyr Asn Glu	Ala Glu Asn Tyr Ala	Ser Leu Leu Asp		
2660	2665	2670		
Ala Thr Leu His Thr Val	Tyr Arg Leu Ser Lys	Asn Arg Met Leu		
2675	2680	2685		
Thr Lys Gly Gln Arg Glu	Ala Val Ser Asp Phe	Leu Val Ala Leu		
2690	2695	2700		
Thr Ser Gln Met Gln Pro	Ala Met Leu Leu Lys	Leu Leu Arg Lys		
2705	2710	2715		
Leu Thr Val Asp Val Ser	Lys Leu Ser Glu Tyr	Thr Thr Val Ala		
2720	2725	2730		
Leu Arg Leu Leu Thr Leu	His Phe Asp Arg Cys	Ala Lys Tyr Tyr		

2735						2740					2745			
Gly Ser Thr Gln Gly Gln	Gly Ser Tyr Gly Ala Ser	Ser Asp Glu												
2750	2755	2760												
Glu Lys Arg Leu Thr Met	Leu Leu Phe Ser Asn Ile	Phe Asp Ser												
2765	2770	2775												
Leu Ser Asn Met Asp Tyr	Asp Pro Glu Leu Phe Gly	Lys Ala Leu												
2780	2785	2790												
Pro Cys Leu Ile Ala Ile	Gly Cys Ala Leu Pro Pro	Asp Tyr Ser												
2795	2800	2805												
Leu Ser Lys Asn Thr Asp	Glu Asp Tyr Tyr Gly Arg	Gln Met Gly												
2810	2815	2820												
Ala Pro Asp Gln Pro Gln	Tyr Met Pro Asn Pro Ile	Asp Thr Asn												
2825	2830	2835												
Asn Val His Leu Asp Asn	Asp Leu Asn Ser Leu Val	Gln Lys Phe												
2840	2845	2850												
Ser Glu His Tyr His Asp	Ala Trp Ala Ser Arg Arg	Leu Glu Gly												
2855	2860	2865												
Gly Trp Thr Tyr Gly Asp	Ile Arg Ser Asp Asn Asp	Arg Lys His												
2870	2875	2880												
Pro Arg Leu Lys Pro Tyr	Asn Met Leu Ser Glu Tyr	Glu Arg Glu												
2885	2890	2895												
Arg Tyr Arg Asp Pro Val	Arg Glu Cys Leu Lys Gly	Leu Leu Ala												
2900	2905	2910												
Ile Gly Trp Thr Val Glu	His Ser Glu Val Glu Val	Pro Leu Asn												
2915	2920	2925												
His Arg Gly Ser Thr Arg	Arg Gln Ser Lys Pro Gln	Ile Asn Glu												
2930	2935	2940												
Phe Gln Asn Glu Gly Ser	Pro Phe Asn Tyr Asn Pro	His Pro Val												
2945	2950	2955												
Asp Met Ser Asn Leu Thr	Leu Ser Arg Glu Met Gln	Asn Met Ala												
2960	2965	2970												
Glu Arg Leu Ala Glu Asn	Ser His Asp Ile Trp Ala	Lys Lys Lys												
2975	2980	2985												
Asn Glu Glu Leu Asn Gly	Cys Gly Gly Val Ile His	Pro Gln Leu												
2990	2995	3000												
Val Pro Tyr Asp Leu Leu	Thr Asp Lys Glu Lys Lys	Lys Asp Arg												
3005	3010	3015												
Glu Arg Ser Gln Glu Phe	Leu Lys Tyr Met Gln Tyr	Gln Gly Tyr												
3020	3025	3030												
Lys Leu His Lys Pro Ser	Lys Gly Gly Ala Val Glu	Glu Gly Gly												

3035					3040					3045				
Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu	Leu
3050						3055					3060			
Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys
3065						3070					3075			
Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys
3080						3085					3090			
Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro
3095						3100					3105			
Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala
3110						3115					3120			
Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys	Glu
3125						3130					3135			
Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu	Leu
3140						3145					3150			
Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val
3155						3160					3165			
Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr	Leu
3170						3175					3180			
Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe
3185						3190					3195			
Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn	Gln
3200						3205					3210			
Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr
3215						3220					3225			
Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val	Leu
3230						3235					3240			
Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser	Asp
3245						3250					3255			
Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu	Ala
3260						3265					3270			
Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg
3275						3280					3285			
Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu	Gly
3290						3295					3300			
Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu
3305						3310					3315			
Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg
3320						3325					3330			
Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys	Met

3335		3340		3345
Glu Ser Cys Met Pro Asn	Leu	Glu Thr Ile Leu	Gly	Glu Val Asp
3350	3355		3360	
Gln Phe Val Glu Ser Asp	Lys	Thr Tyr Asn Asp	Ala	Pro His Ile
3365	3370		3375	
Ile Asp Val Ile Leu Pro	Leu	Leu Cys Ala Tyr	Leu	Pro Phe Trp
3380	3385		3390	
Trp Ser Gln Gly Pro Asp	Asn	Val Ser Pro Thr	Ser	Gly Asn His
3395	3400		3405	
Val Thr Met Val Thr Ala	Asp	His Met Asn Pro	Leu	Leu Arg Asn
3410	3415		3420	
Val Leu Lys Met Ile Lys	Lys	Asn Ile Gly Asn	Asp	Asn Ala Pro
3425	3430		3435	
Trp Met Thr Arg Ile Ala	Ala	Tyr Thr Gln Gln	Ile	Ile Ile Asn
3440	3445		3450	
Thr Ser Glu Glu Leu Leu	Lys	Asp Pro Phe Leu	Pro	Leu Ala Glu
3455	3460		3465	
Arg Val Lys Lys Arg Thr	Glu	Asn Met Leu His	Lys	Glu Asp Ser
3470	3475		3480	
Met Arg Gly Phe Ile Lys	Ser	Ala Thr Asp Asp	Thr	Ser Gln Val
3485	3490		3495	
Glu Thr Gln Leu Gln Glu	Asp	Trp Asn Leu Leu	Val	Arg Asp Ile
3500	3505		3510	
Tyr Ser Phe Tyr Pro Leu	Leu	Ile Lys Tyr Val	Asp	Leu Gln Arg
3515	3520		3525	
Asn His Trp Leu Lys Asp	Asn	Ile Pro Glu Ala	Glu	Glu Leu Tyr
3530	3535		3540	
Asn His Val Ala Glu Ile	Phe	Asn Ile Trp Ser	Lys	Ser Gln Tyr
3545	3550		3555	
Phe Leu Lys Glu Glu Gln	Asn	Phe Ile Ser Ala	Asn	Glu Ile Asp
3560	3565		3570	
Asn Met Ala Leu Ile Met	Pro	Thr Ala Thr Arg	Arg	Ser Ala Ile
3575	3580		3585	
Ser Glu Gly Ala Pro Ala	Val	Gly Gly Lys Val	Lys	Lys Lys Lys
3590	3595		3600	
Lys Asn Arg Asp Lys Lys	Arg	Asp Lys Asp Lys	Glu	Val Gln Ala
3605	3610		3615	
Ser Leu Met Val Ala Cys	Leu	Lys Arg Leu Leu	Pro	Val Gly Leu
3620	3625		3630	
Asn Leu Phe Ala Gly Arg	Glu	Gln Glu Leu Val	Gln	His Cys Lys

3635		3640		3645
Asp Arg Tyr Leu Lys Lys Met Pro Glu Tyr Asp Val Ile Glu Phe				
3650		3655		3660
Ala Arg Asn Gln Leu Thr Leu Pro Asp Lys Leu Asp Pro Ser Asp				
3665		3670		3675
Glu Met Ser Trp Gln His Tyr Leu Tyr Ser Lys Leu Gly Lys Thr				
3680		3685		3690
Glu Glu Pro Val Asp Glu Gln Ala Leu Glu Lys Ala Asn Val Asn				
3695		3700		3705
Ser Asn Glu Lys Gly Lys Asp Lys Thr Gln Glu Thr Val Asp Arg				
3710		3715		3720
Ile Val Ala Met Ala Lys Val Leu Phe Gly Leu His Met Ile Asp				
3725		3730		3735
His Pro Gln Gln Gln Ser Lys Asn Val Tyr Arg Ser Val Val Ser				
3740		3745		3750
Ile Gln Arg Lys Arg Ala Val Ile Ala Cys Phe Arg Gln Thr Ser				
3755		3760		3765
Leu His Ser Leu Pro Arg His Arg Ala Cys Asn Ile Phe Ala Arg				
3770		3775		3780
Ser Tyr Tyr Glu Gln Trp Leu Gln Glu Glu Asn Val Gly Gln Glu				
3785		3790		3795
Val Met Val Glu Asp Leu Thr Gln Thr Phe Glu Asp Ser Glu Lys				
3800		3805		3810
Ser Lys Lys Glu Gly Glu Glu Thr Asp Ser Lys Pro Asp Pro Leu				
3815		3820		3825
Thr Gln Leu Val Thr Thr Phe Cys Arg Gly Ala Met Thr Glu Arg				
3830		3835		3840
Ser Gly Ala Leu Gln Glu Asp Leu Leu Tyr Met Ser Tyr Ala Gln				
3845		3850		3855
Ile Ala Ala Lys Ser Thr Gly Lys Glu Glu Glu Glu Gly Gly Asp				
3860		3865		3870
Glu Glu Gly Gly Glu Gly Gly Glu Glu Gly Glu Gly Thr Ser Ile				
3875		3880		3885
His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His Gln Ala				
3890		3895		3900
Arg Leu Ser Asn Arg Gly Val Ala Glu Met Val Leu Leu His Ile				
3905		3910		3915
Ser Ala Ser Lys Gly Ile Pro Ser Glu Met Val Met Thr Thr Leu				
3920		3925		3930
Asn Leu Gly Ile Ala Ile Leu Arg Gly Gly Asn Ile Asp Ile Gln				

3935		3940		3945
Met Gly 3950	Met Leu Asn His	Leu 3955	Lys Glu Lys Lys	Asp 3960 Val Gly Phe
Phe Thr 3965	Ser Ile Ala Gly	Leu 3970	Met Asn Ser Cys	Ser 3975 Val Leu Asp
Leu Asp 3980	Ala Phe Glu Arg	Asn 3985	Thr Lys Ala Glu	Gly 3990 Leu Gly Val
Gly Ser 3995	Glu Gly Ala Ala	Gly 4000	Glu Lys Asn Met	His 4005 Asp Ala Glu
Phe Thr 4010	Cys Ala Leu Phe	Arg 4015	Phe Ile Gln Leu	Thr 4020 Cys Glu Gly
His Asn 4025	Leu Glu Trp Gln	Asn 4030	Tyr Leu Arg Thr	Gln 4035 Ala Gly Asn
Thr Thr 4040	Thr Val Asn Val	Val 4045	Ile Cys Thr Val	Asp 4050 Tyr Leu Leu
Arg Leu 4055	Gln Glu Ser Ile	Met 4060	Asp Phe Tyr Trp	His 4065 Tyr Ser Ser
Lys Glu 4070	Ile Ile Asp Pro	Ala 4075	Gly Lys Ala Asn	Phe 4080 Phe Lys Ala
Ile Glu 4085	Val Ala Ser Gln	Val 4090	Phe Asn Thr Leu	Ile 4095 Glu Val Ile
Gln Gly 4100	Pro Cys Thr Leu	Asn 4105	Gln Gln Ala Leu	Ala 4110 His Ser Arg
Leu Trp 4115	Asp Ala Val Gly	Gly 4120	Phe Leu Phe Leu	Phe 4125 Ser His Met
Gln Asp 4130	Lys Leu Ser Lys	His 4135	Ser Ser Gln Val	Asp 4140 Leu Leu Lys
Glu Leu 4145	Leu Asn Leu Gln	Lys 4150	Asp Met Ile Thr	Met 4155 Met Leu Ser
Met Leu 4160	Glu Gly Asn Val	Val 4165	Asn Gly Thr Ile	Gly 4170 Lys Gln Met
Val Asp 4175	Thr Leu Val Glu	Ser 4180	Ala Ser Asn Val	Glu 4185 Leu Ile Leu
Lys Tyr 4190	Phe Asp Met Phe	Leu 4195	Lys Leu Ala Asp	Leu 4200 Ile Glu Ser
Pro Ser 4205	Phe His Glu Val	Asp 4210	Met Lys Asn Glu	Gly 4215 Trp Val Thr
Pro Lys 4220	Asp Phe Arg Glu	Lys 4225	Met Glu Gln Ser	Lys 4230 Asn Tyr Thr
Pro Glu	Glu Met Asp Phe	Leu	Leu Ala Cys Cys	Glu Arg Asn His

4235	4240	4245
Glu Gly Lys Ile Asp Tyr	Arg Ala Phe Val Glu	His Phe His Glu
4250	4255	4260
Pro Ser Lys Glu Ile Gly	Phe Asn Leu Ala Val	Leu Leu Thr Asn
4265	4270	4275
Leu Ser Glu His Met Pro	Asn Glu Pro Arg Leu	Ala Arg Phe Leu
4280	4285	4290
Glu Thr Ala Gly Ser Val	Leu Asn Tyr Phe Glu	Pro Phe Leu Gly
4295	4300	4305
Arg Ile Glu Ile Leu Gly	Ser Ser Lys Arg Ile	Glu Arg Val Tyr
4310	4315	4320
Phe Glu Ile Lys Asp Ser	Asn Ile Glu Gln Trp	Glu Lys Pro Gln
4325	4330	4335
Ile Arg Glu Ser Lys Arg	Ala Phe Phe Tyr Ser	Ile Val Thr Glu
4340	4345	4350
Gly Gly Asp Lys Glu Lys	Leu Glu Ala Phe Val	Asn Phe Cys Glu
4355	4360	4365
Asp Ala Ile Phe Glu Met	Thr His Ala Ser Gly	Leu Met Ala Thr
4370	4375	4380
Asp Asp Gly Gly Gly Asn	Val Lys Arg Asp Thr	Ala Tyr Ser Ser
4385	4390	4395
Tyr Met Ser Glu Glu Glu	Glu Glu Arg Ala Ala	Arg Asp Pro Ile
4400	4405	4410
Arg Arg Thr Ile Thr Ala	Val Lys Glu Gly Leu	Lys Phe Gly Val
4415	4420	4425
His Met Leu Ser Pro Ala	Asn Ile Lys His Gln	Ile Gly Val Met
4430	4435	4440
Gln Thr Lys Ser Ile Pro	Glu Leu Ile Val Gly	Phe Phe Lys Ile
4445	4450	4455
Ile Phe Tyr Ile Phe Tyr	Tyr Thr Gly Tyr Ala	His Phe Cys Val
4460	4465	4470
Val Arg Tyr Ile Phe Gly	Ile Leu Leu Asn Leu	Met Arg Gly Pro
4475	4480	4485
Ala Pro Glu Gln Glu Glu	Glu Pro Val Val Glu	Glu Glu Thr Phe
4490	4495	4500
Gly Arg Ala Leu Pro Pro	Leu Pro Leu Glu Glu	Pro Pro Gly Thr
4505	4510	4515
Val Gln Ala Phe Gly Leu	Asp Ile Asn Lys Glu	Glu Asn Gly Met
4520	4525	4530
Tyr Lys Val Val Val His	Glu Ser Pro Ala Asn	Ser Ser Met Glu

4535						4540				4545				
Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser	Gly
4550						4555					4560			
Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile	Val
4565						4570					4575			
Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu	Arg
4580						4585					4590			
Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile	Glu
4595						4600					4605			
Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro	Ala
4610						4615					4620			
Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val	Ser
4625						4630					4635			
Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val
4640						4645					4650			
Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val	Thr
4655						4660					4665			
Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu	Ile
4670						4675					4680			
Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser	Gly
4685						4690					4695			
Phe	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met	Glu
4700						4705					4710			
Asp	Glu	Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe	Tyr
4715						4720					4725			
Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu	Val
4730						4735					4740			
Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu
4745						4750					4755			
Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu	Phe
4760						4765					4770			
Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe	Lys
4775						4780					4785			
Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val
4790						4795					4800			
Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys	Tyr
4805						4810					4815			
Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly	Met
4820						4825					4830			
Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly	Ile



4835						4840						4845			
Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys	
4850						4855					4860				
Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu	Trp	
4865						4870					4875				
Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe	
4880						4885					4890				
Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	
4895						4900					4905				
Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	
4910						4915					4920				
Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile	
4925						4930					4935				
Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp	Glu	
4940						4945					4950				
Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe	
4955						4960					4965				
His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	
4970						4975					4980				
Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile	Ile	
4985						4990					4995				
Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu	Ala	
5000						5005					5010				
Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	
5015						5020					5025				
Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe	Ile	
5030						5035					5040				
Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly	Phe	
5045						5050					5055				
Asp	Thr	His	Val	Gln	Lys	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe	
5060						5065					5070				
Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly	
5075						5080					5085				
Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr	Gln	Gln	Arg	Ser	Trp	Asp	
5090						5095					5100				
Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Glu	
5105						5110					5115				
Leu	Ser	Gly	Gly	Gly	Gly	Gly	Gly								
5120						5125									

<210> 57  
 <211> 4868  
 <212> PRT  
 <213> Anopheles gambiae

<400> 57  
 Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg Val Cys Leu  
 1 5 10 15  
 Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu Asn Ile Ala  
 20 25 30  
 Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe Val Ile Glu  
 35 40 45  
 Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr Ala Ala Gly  
 50 55 60  
 Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr Leu Leu Tyr  
 65 70 75 80  
 Gly Asn Ala Ile Leu Leu Arg His Asn Asn Ser Asp Met Tyr Leu Ala  
 85 90 95  
 Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe Asp Val Gly  
 100 105 110  
 Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr Val His Pro  
 115 120 125  
 Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val Gly Asp Asp  
 130 135 140  
 Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His Thr Thr Lys  
 145 150 155 160  
 Glu Asn Asp Leu Ser Ile Val Asn Ala Ser Phe His Val Thr His Trp  
 165 170 175  
 Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys Tyr Val Gly  
 180 185 190  
 Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly Gly Asp Glu  
 195 200 205  
 Cys Leu Thr Ile Pro Ser Thr Trp Ser Leu Asp Ser Gly Gln Asn Ile  
 210 215 220  
 Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala Arg Ser Leu Trp  
 225 230 235 240  
 Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly Phe Ile Asn Trp  
 245 250 255  
 Ser His Pro Met Arg Ile Arg His Leu Thr Thr Gly Arg Tyr Leu Gly  
 260 265 270  
 Val Asn Glu Asn Asn Glu Leu Ile Leu Met Ser Arg Asp Gln Ala Thr  
 275 280 285

Thr	Ser	Gln	Thr	Ala	Phe	Val	Leu	Arg	Leu	Glu	Lys	Asp	Asp	Gln	Lys	
	290					295					300					
Val	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Ile	Ile	Gly	Ala	Pro	Ile	Ile	
	305				310					315					320	
Lys	Tyr	Gly	Asp	Ser	Thr	Val	Ile	Met	Gln	His	Tyr	Glu	Ser	Gly	Leu	
				325					330					335		
Trp	Val	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val	Gly	Lys	
			340					345					350			
Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met	Asp	Asp	
		355					360					365				
Gly	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Arg	Thr	Ala	Arg	
	370					375					380					
Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Lys	Phe	Ile	Ser	Gly	Leu	
	385				390					395					400	
Glu	Thr	Leu	Gln	Glu	Asn	Arg	Arg	His	Ser	Ile	Phe	Leu	Gln	Thr	Val	
			405						410					415		
Asn	Leu	Gly	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn	Tyr	Phe	
		420					425						430			
Ala	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn	Arg	Leu	
		435					440					445				
Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly	Val	Leu	
	450					455					460					
Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Val	Ile	Ser	Ser	Gln	
	465				470					475					480	
Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Ser	Asp	Glu	Ser	Gly	Gln	Ser	Trp	
				485					490					495		
Asp	Met	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	
			500					505					510			
Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn	Arg	Leu	Asn	
		515					520					525				
Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	Gly	Ser	Gly	
	530					535						540				
Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	
	545				550					555					560	
Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	
				565					570					575		
Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	
			580					585					590			
Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	
		595					600					605				

Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Gly	Leu	Val	Asp	
610						615					620					
His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	
625					630					635					640	
Ser	Ala	Ile	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	
				645					650					655		
Glu	Gln	Met	Thr	His	Met	Thr	Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	
			660					665					670			
Thr	Ala	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	
		675					680					685				
Asn	Gly	Val	Gly	Asp	Asp	Leu	Phe	Ser	Tyr	Gly	Phe	Asp	Gly	Val	Tyr	
	690					695					700					
Phe	Trp	Ser	Ala	Gly	Arg	Arg	Thr	Cys	Val	Val	Pro	Arg	Glu	Val	Thr	
705					710					715					720	
Glu	Pro	Phe	Ile	Lys	Lys	Gly	Asp	Val	Ile	Gly	Cys	Thr	Leu	Asp	Leu	
				725					730					735		
Ser	Val	Pro	Val	Ile	Arg	Phe	Thr	Phe	Asn	Gly	Glu	Pro	Val	Gln	Gly	
			740					745					750			
Cys	Phe	Thr	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val	Met	Ser	
		755					760					765				
Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly	Asp	Asn	Gly	
	770					775					780					
Arg	Leu	Lys	Phe	Asn	Pro	Pro	Pro	Gly	Phe	Ser	Pro	Leu	Val	Gln	Cys	
785					790					795					800	
Leu	Met	Pro	His	Gln	Asn	Leu	Ser	Leu	Asp	Pro	Cys	Phe	Tyr	Phe	Gly	
				805					810					815		
Asn	Leu	Asn	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Val	Glu	Asp	Asp	
			820					825					830			
Ser	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Ser	Ile	Val	Thr	Leu	Pro	
			835				840					845				
Ser	Ser	Val	Glu	Thr	Ile	Lys	Asp	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	
	850					855					860					
Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Thr	Trp	Gly	Glu	Arg	
865					870				875						880	
Arg	Asp	Asp	Val	Tyr	Arg	Ile	His	Pro	Cys	Leu	Thr	Ser	Phe	Glu	Lys	
				885					890					895		
Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Cys	Gln	Leu	Ala	Val	Gln	Thr	
			900					905					910			
Leu	Lys	Thr	Ile	Leu	Ala	Leu	Gly	Tyr	Tyr	Ile	Ser	Met	Asp	Lys	Pro	
		915					920					925				

Pro Ala Arg Ile Arg Pro Ile Arg Leu Pro Asn Asp Pro Tyr Met Gln  
 930 935 940  
 Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Ala Val Leu  
 945 950 955 960  
 Thr Pro Lys Met Glu Glu Leu Val Asp Gln Leu Ala Glu Asn Thr His  
 965 970 975  
 Asn Leu Trp Ala Lys Glu Arg Ile Gln Gln Gly Trp Thr Tyr Gly Leu  
 980 985 990  
 Asn Glu Asp Ser Glu Asn Leu Arg Ser Pro His Leu Val Pro Tyr Ser  
 995 1000 1005  
 Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp Thr Ala Ser  
 1010 1015 1020  
 Glu Thr Val Arg Thr Leu Leu Ile Tyr Gly Tyr Asn Leu Asp Pro  
 1025 1030 1035  
 Pro Thr Gly Glu Ala Asn Glu Ala Leu Ala Ala Glu Ala Leu Arg  
 1040 1045 1050  
 Gln Lys Phe Ala Ala Tyr Arg Thr Tyr Arg Val Glu Arg Thr Tyr  
 1055 1060 1065  
 Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu Val Leu Thr  
 1070 1075 1080  
 Ala Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp Cys Asn Pro  
 1085 1090 1095  
 Gly Thr Met Leu Gly Ser Asp Asp Ala Ser Trp Ala Phe Asp Gly  
 1100 1105 1110  
 Tyr Asn Ile Gly Gln Lys Ala Arg Val Val Tyr Gly Gln Asp Val  
 1115 1120 1125  
 Asp Ser Leu Lys Trp Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr  
 1130 1135 1140  
 Glu Pro Phe Cys Val Asn Met Lys Arg Pro Val Thr His Trp Tyr  
 1145 1150 1155  
 Thr Lys Asp Gln Pro Ile Phe Glu Asn Thr Asp Glu Ile Pro Glu  
 1160 1165 1170  
 Cys Lys Ile Asp Val Thr Arg Ile Pro Gly Gly Ala Asp Thr Pro  
 1175 1180 1185  
 Pro Cys Met Lys Ile Ser His Asn Thr Phe Glu Thr Met Glu Lys  
 1190 1195 1200  
 Ala Asn Trp Glu Phe Leu Arg Leu Ser Leu Pro Val Thr Cys Ala  
 1205 1210 1215  
 Asn Thr Phe Ile Thr Glu Gln Glu Lys Met Arg Arg Trp Glu Glu  
 1220 1225 1230

Ile Arg 1235	Ile Arg Gln His 1240	Arg Leu Met Thr Glu Val 1245	Asp His Ser
Ala Pro 1250	Ala His Phe Asp His 1255	Ile Met Arg Ser Gly 1260	Phe Thr Met
Asn Asp 1265	Ile Lys Gly Leu His 1270	Arg Asn Tyr Ser Glu 1275	Asp Ala Ala
Glu Ala 1280	Asp Glu Met Met Arg 1285	Asn Gly Pro Arg Arg 1290	Pro Ser Arg
His Gln 1295	Gly Arg Gly Gly Leu 1300	Ser Pro Pro Gly Ile 1305	Glu Ile Asn
Gly Glu 1310	Ala Thr Ser Asp Gly 1315	Glu Leu Asn Ala Tyr 1320	Ser Asp Asn
Glu Leu 1325	Glu Gly Gly Asp Asp 1330	Arg Lys Lys Arg Gly 1335	Arg Ser Pro
Phe Arg 1340	Leu Phe Gly Lys Lys 1345	Arg Asp Gln Ser Lys 1350	Asp Lys Leu
Lys Asp 1355	Arg Arg Thr Pro Glu 1360	Pro Glu Pro Arg Lys 1365	Ser Asn Leu
Lys Val 1370	Thr Gln Arg Gly Gln 1375	Ala Thr Arg Met Ser 1380	Asn Ser Asp
Leu Arg 1385	Ala Gln Ala Pro Leu 1390	Thr Pro Glu Arg Lys 1395	Gly Met Gly
Ser Pro 1400	Gln Val Glu Ser Phe 1405	Gly Asn Glu Val Tyr 1410	Asp Ala Asp
Cys Leu 1415	Arg Leu Ile Asn Glu 1420	Tyr Phe Tyr Gly Val 1425	Arg Ile Phe
Pro Gly 1430	Gln Asp Pro Thr His 1435	Val Tyr Val Gly Trp 1440	Val Thr Thr
Gln Tyr 1445	His Val His Ser Lys 1450	Glu Phe Ser Gln Asn 1455	Lys Val Arg
His Ala 1460	Ala Ile Tyr Val Glu 1465	Asp Glu Asn Glu Lys 1470	Thr Ile Glu
Ile Val 1475	Asn Arg Gln Ser Cys 1480	Tyr Met Val Arg Ala 1485	Asp Glu Leu
Phe Asn 1490	Glu Val Thr Gln Asp 1495	Ser Ser Gly Lys Gly 1500	Ala Ser Gln
Gly Met 1505	Phe Val Gly Cys Phe 1510	Val Asp Thr Ala Thr 1515	Gly Thr Ile
Arg Phe 1520	Thr Cys Glu Gly Lys 1525	Glu Thr Ser His Val 1530	Phe Leu Met

Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr
1535						1540					1545			
Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	Arg	Thr	Pro	Thr	Thr
1550						1555					1560			
Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr	Ser	Asp	Lys	His	Ile
1565						1570					1575			
Asn	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro
1580						1585					1590			
His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr	Ala	Leu	Gln	Val	His	Ala
1595						1600					1605			
Leu	Lys	Leu	Ser	Asp	Ile	Arg	Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp
1610						1615					1620			
Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	Arg	Cys
1625						1630					1635			
Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Ile	Asp	Arg	Leu	Leu	Gln	Phe
1640						1645					1650			
His	Ala	His	Thr	Leu	Thr	Leu	Tyr	Ser	Ala	Leu	Cys	Tyr	Gln	Ser
1655						1660					1665			
Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Ser	His	Val	Asp	Gln	Lys
1670						1675					1680			
Gln	Leu	Leu	Tyr	Ala	Ile	Gln	Ser	Glu	Tyr	Met	Ser	Gly	Pro	Leu
1685						1690					1695			
Arg	Leu	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ser	Leu	His	Leu	Glu	Ser
1700						1705					1710			
His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn	Glu	Tyr	Ile	Ile	Pro
1715						1720					1725			
Leu	Gly	Ser	Glu	Leu	Arg	Glu	Leu	Tyr	Ile	Asp	Pro	Glu	Met	Cys
1730						1735					1740			
His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Leu	Ser	Val	Arg	Pro	Glu	Met
1745						1750					1755			
Asn	Met	Thr	Glu	Ile	Ala	Pro	Thr	Pro	Ser	Gln	Ser	Asn	Met	Pro
1760						1765					1770			
Thr	Ile	Val	Ala	Pro	Asp	Ser	Ser	Ser	Glu	Pro	Ile	Pro	Ala	Ile
1775						1780					1785			
Asp	Ser	Leu	Tyr	Ser	Pro	Arg	Phe	Pro	Leu	Glu	Val	Val	Arg	Glu
1790						1795					1800			
Phe	Val	Met	Ser	Ala	Leu	Gln	Glu	Ala	Val	Gln	Ile	Asn	Gln	Val
1805						1810					1815			
His	Asn	Arg	Asp	Pro	Ile	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu
1820						1825					1830			

Pro	Leu	Ile	Lys	Leu	Ile	Asp	Arg	Leu	Leu	Leu	Val	Gly	Val	Ile
1835						1840					1845			
Thr	Asn	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Ile	Asp	Pro	Glu
1850						1855					1860			
Thr	Trp	Asp	Pro	Ser	Phe	Glu	Lys	Glu	Gly	Arg	Asp	Glu	His	Arg
1865						1870					1875			
Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln
1880						1885					1890			
Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Val	Gln	Leu	Arg	His
1895						1900					1905			
Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ala	His	Asn	Tyr	Val	Gly	Asp
1910						1915					1920			
Leu	Gln	Gln	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	Lys	Gln	Ser
1925						1930					1935			
Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg
1940						1945					1950			
Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	Leu	Gly	Tyr	Lys	Asn
1955						1960					1965			
Leu	Glu	Glu	Asp	Asp	Leu	Glu	Asn	Ala	Ser	Cys	Gly	Pro	Glu	Leu
1970						1975					1980			
Arg	Asn	Arg	Leu	Ile	Glu	Phe	His	Glu	Lys	Leu	Met	Gly	Lys	Val
1985						1990					1995			
Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Glu	Glu	Pro	Glu	Ala	Asp	Lys
2000						2005					2010			
Leu	Glu	Glu	Gly	Arg	Pro	Gly	Ala	Met	Lys	Lys	Leu	Tyr	Asn	Phe
2015						2020					2025			
Ile	Asn	Ala	Val	Lys	Glu	Leu	Glu	Glu	Asp	Pro	Lys	Glu	Pro	Val
2030						2035					2040			
Glu	Glu	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys	Val	Leu
2045						2050					2055			
Ile	Lys	Gln	Leu	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu	Asn
2060						2065					2070			
Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Gly	Leu	Leu	Val	Arg	Gln	Tyr
2075						2080					2085			
Asp	Thr	Ile	Gly	Glu	Leu	Ile	Lys	Ala	Leu	Asn	Lys	Thr	Tyr	Val
2090						2095					2100			
Ile	Asn	Ser	Lys	Thr	Lys	Gly	Asp	Val	Ala	Asn	Met	Trp	Ile	Gly
2105						2110					2115			
Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln	Glu
2120						2125					2130			



Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn	Asn
2135						2140					2145			
His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu	Arg	Val
2150						2155					2160			
His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly	Arg	Arg
2165						2170					2175			
Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Val	Gln	Thr	Ala	Asp	Gly	Glu
2180						2185					2190			
Glu	Ser	Ala	Pro	Lys	Glu	Lys	Asp	Thr	Ser	His	Gln	Met	Val	Val
2195						2200					2205			
Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg	Met
2210						2215					2220			
Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Glu	Asn
2225						2230					2235			
Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr	Pro
2240						2245					2250			
Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu	Ala
2255						2260					2265			
Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Ile	Tyr	Leu
2270						2275					2280			
Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Ile	Glu	Arg	Gly
2285						2290					2295			
Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg	Tyr	Leu
2300						2305					2310			
Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val	Glu
2315						2320					2325			
Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro	Glu
2330						2335					2340			
Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Leu	Lys
2345						2350					2355			
Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile	Ser	Glu	Arg
2360						2365					2370			
Arg	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Thr	Gly	Leu	Asn
2375						2380					2385			
Phe	Ser	His	Pro	Leu	Pro	Glu	Gly	Asp	Asp	Asp	Glu	Asp	Tyr	Ile
2390						2395					2400			
Asp	Thr	Gly	Ala	Ala	Ile	Leu	Cys	Phe	Tyr	Cys	Thr	Leu	Val	Asp
2405						2410					2415			
Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ala	Val	Ile	Glu	Gln	Gly
2420						2425					2430			

Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu	Val
2435						2440					2445			
Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe	Thr	Leu
2450						2455					2460			
Thr	Asn	Pro	Ala	Leu	Gly	Glu	Asp	Arg	Pro	Lys	Ser	Asp	Met	Pro
2465						2470					2475			
Ser	Gly	Leu	Val	Pro	Gly	His	Lys	Gln	Ser	Ile	Val	Leu	Phe	Leu
2480						2485					2490			
Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	Phe	Tyr	Arg	Leu
2495						2500					2505			
Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala	Thr	Met	Leu
2510						2515					2520			
Asp	Arg	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ser	Met	Asn
2525						2530					2535			
Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His	Ser
2540						2545					2550			
Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp	Ala
2555						2560					2565			
Thr	Leu	His	Thr	Val	Tyr	Arg	Met	Ser	Lys	Asn	Arg	Met	Leu	Thr
2570						2575					2580			
Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu	Thr
2585						2590					2595			
Ser	Ala	Met	His	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys	Leu
2600						2605					2610			
Thr	Ile	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala	Leu
2615						2620					2625			
Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys	Tyr	Tyr	Gly
2630						2635					2640			
Thr	Thr	Gly	Gly	Gly	Gln	Ala	Ser	Gln	Phe	Gly	Ala	Ser	Ser	Asp
2645						2650					2655			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2660						2665					2670			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2675						2680					2685			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2690						2695					2700			
Ser	Leu	Ser	Lys	Asn	Ser	Asp	Asp	Asp	Leu	Tyr	Gly	Lys	Pro	Thr
2705						2710					2715			
Gly	Gly	Gly	Pro	Asp	Gln	Pro	His	Tyr	Asn	Pro	Gln	Pro	Ile	Asp
2720						2725					2730			

Thr	Thr	Ala	Val	Gln	Leu	Thr	Asn	Asp	Leu	Asn	Gln	Ile	Val	Gln
2735						2740					2745			
Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys	Leu
2750						2755					2760			
Glu	Asn	Gly	Trp	Thr	Tyr	Gly	Asp	Gln	Trp	Ser	Asp	Ala	Asn	Lys
2765						2770					2775			
Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Thr	Leu	Ser	Glu	Tyr	Glu
2780						2785					2790			
Arg	Glu	Arg	Tyr	Arg	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu
2795						2800					2805			
Leu	Ala	Leu	His	Trp	Arg	Ile	Glu	His	Ser	Glu	Gly	Asp	Val	Pro
2810						2815					2820			
Leu	Ser	Asn	Arg	Gly	Ser	Met	Arg	Arg	Gln	Ser	Lys	Pro	Asn	Leu
2825						2830					2835			
Glu	Leu	Gln	Gly	Asp	Thr	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His
2840						2845					2850			
Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn
2855						2860					2865			
Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys
2870						2875					2880			
Lys	Lys	Asn	Glu	Glu	Leu	Asp	Gln	Cys	Gly	Gly	Ala	Ile	His	Ala
2885						2890					2895			
Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Arg	Lys
2900						2905					2910			
Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Leu	Gln	Tyr	Gln
2915						2920					2925			
Gly	Leu	Lys	Leu	His	Lys	Pro	Ser	Arg	Gly	Gln	Thr	Glu	Glu	Pro
2930						2935					2940			
Gly	Met	Ser	Thr	Ala	Ala	Ile	Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu
2945						2950					2955			
Leu	Glu	Lys	Leu	Ile	Ser	Tyr	Ser	Asp	Arg	Ala	Thr	Ile	Asn	Met
2960						2965					2970			
Lys	Leu	Leu	Lys	Pro	Ser	Ser	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
2975						2980					2985			
Lys	Thr	Cys	Ser	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
2990						2995					3000			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Ser	Asn	Arg	Asn	Tyr	Phe	Ile
3005						3010					3015			
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys
3020						3025					3030			

Glu	Lys	Glu	Met	Val	Ala	Gly	Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu
3035						3040					3045			
Leu	Arg	His	Arg	Leu	Ala	Ala	Phe	Gly	Ala	Asp	Val	Arg	Ile	Thr
3050						3055					3060			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Ser	Ile	Asp	Ala	Lys	Ser
3065						3070					3075			
Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr
3080						3085					3090			
Phe	Phe	Asn	Asn	Thr	Ala	Asp	Asp	Leu	Gly	Gln	Thr	Ile	Val	Asn
3095						3100					3105			
Leu	Thr	Asp	Gly	Lys	Tyr	Asp	Arg	Leu	Arg	Gly	Thr	His	Leu	Lys
3110						3115					3120			
Thr	Ser	Thr	Ser	Leu	Ala	Tyr	Val	Asn	Gln	Val	Ile	Leu	Pro	Val
3125						3130					3135			
Leu	Thr	Ser	Leu	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser
3140						3145					3150			
Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu
3155						3160					3165			
Ser	Ala	Leu	Tyr	Thr	Leu	Gly	Thr	Asp	Thr	Ser	Leu	Thr	Arg	Asp
3170						3175					3180			
Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Leu	Glu	Arg	His	Lys	Pro	Ala	Leu
3185						3190					3195			
Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe
3200						3205					3210			
Leu	Glu	Pro	His	Ala	Asn	Lys	His	Asn	Pro	Phe	Ser	Leu	Leu	Asn
3215						3220					3225			
Arg	Ile	Ala	Asp	Thr	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Ser	Lys
3230						3235					3240			
Met	Glu	Ser	Cys	Met	Pro	Thr	Leu	Glu	Ser	Ile	Leu	Ser	Glu	Val
3245						3250					3255			
Asp	Gln	Phe	Val	Glu	Ser	Glu	Lys	Thr	Tyr	Gln	Glu	Ala	Gln	His
3260						3265					3270			
Ile	Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ser	Tyr	Leu	Pro	Phe
3275						3280					3285			
Trp	Trp	Asn	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Gln	Ser	Gly	Asn
3290						3295					3300			
His	Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	His	Leu	Leu	Lys
3305						3310					3315			
Asn	Val	Leu	Lys	Met	Ile	Arg	Lys	Asn	Ile	Ala	Asn	Glu	Asn	Ala
3320						3325					3330			

Pro	Trp	Met	Thr	Arg	Ile	Ala	Thr	Tyr	Thr	Gln	Gln	Ile	Ile	Ile
3335						3340					3345			
Asn	Ser	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Val	Phe	Leu	Pro	Leu	Ala
3350						3355					3360			
Glu	Arg	Val	Lys	Lys	Arg	Cys	Asp	Ser	Met	Phe	His	Lys	Glu	Glu
3365						3370					3375			
Ser	Leu	Arg	Gly	Phe	Leu	Lys	Ser	Ser	Thr	Asp	Asp	Thr	Ser	Gln
3380						3385					3390			
Ile	Glu	Ala	Gln	Ile	Gln	Glu	Asp	Trp	Gln	Leu	Leu	Val	Arg	Asp
3395						3400					3405			
Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln
3410						3415					3420			
Arg	Asn	His	Trp	Leu	Lys	Asp	Asn	Val	Ala	Glu	Ala	Glu	Glu	Leu
3425						3430					3435			
Tyr	Asn	Tyr	Val	Ala	Glu	Ile	Phe	Asn	Val	Trp	Ser	Lys	Ser	Gln
3440						3445					3450			
Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile
3455						3460					3465			
Asp	Asn	Met	Thr	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala
3470						3475					3480			
Ala	Val	Ser	Gly	Asp	Met	Pro	Ala	Ser	Gly	Gly	Lys	Val	Lys	Lys
3485						3490					3495			
Lys	Lys	Arg	Ser	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Ile
3500						3505					3510			
Gln	Ser	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val
3515						3520					3525			
Gly	Leu	Asn	Leu	Phe	Ala	Gly	Lys	Glu	Gln	Glu	Leu	Val	Gln	His
3530						3535					3540			
Cys	Lys	Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Glu	Val	Ile
3545						3550					3555			
Glu	Phe	Ala	Arg	Thr	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro
3560						3565					3570			
Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly
3575						3580					3585			
Lys	Lys	Glu	Gln	Ile	Val	Gln	Asp	Thr	Leu	Glu	Lys	Ser	Asp	Lys
3590						3595					3600			
Lys	Pro	Glu	Asn	Lys	Ile	Glu	Asp	Thr	Val	Glu	Arg	Ile	Val	Ala
3605						3610					3615			
Met	Ala	Lys	Val	Leu	Tyr	Gly	Leu	His	Met	Glu	Gln	Glu	Met	Glu
3620						3625					3630			

Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala	Arg	Leu	Ala	Asn	Arg	Gly
3635						3640					3645			
Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Val
3650						3655					3660			
Pro	Ser	Glu	Met	Val	Met	Arg	Thr	Leu	Glu	Leu	Gly	Ile	Ala	Val
3665						3670					3675			
Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His
3680						3685					3690			
Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly
3695						3700					3705			
Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg
3710						3715					3720			
Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val	Gly	Ser	Asp	Gly	Ala	Ala
3725						3730					3735			
Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe
3740						3745					3750			
Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln
3755						3760					3765			
Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val
3770						3775					3780			
Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile
3785						3790					3795			
Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro
3800						3805					3810			
Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln
3815						3820					3825			
Val	Phe	Asn	Thr	Leu	Thr	Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln
3830						3835					3840			
Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly
3845						3850					3855			
Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys
3860						3865					3870			
His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln
3875						3880					3885			
Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val
3890						3895					3900			
Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu
3905						3910					3915			
Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe
3920						3925					3930			

Leu Lys	Leu Lys Asp	Leu Thr	Ser Thr	Pro Ser	Phe	Met Glu Ile
3935		3940			3945	
Asp Ser	Asn Gly Asp Gly	Trp	Ile Met	Pro Lys	Asp	Phe Arg Glu
3950		3955			3960	
Lys Met	Glu Gln Gln Lys	Ser	Tyr Thr	Pro Glu	Glu	Ile Asp Phe
3965		3970			3975	
Leu Leu	Ala Cys Cys Glu	Thr	Asn His	Asp Gly	Lys	Ile Asp Tyr
3980		3985			3990	
Ile Gly	Phe Val Asp Arg	Phe	His Glu	Pro Ala	Lys	Glu Ile Gly
3995		4000			4005	
Phe Asn	Leu Ala Val Leu	Leu	Thr Asn	Leu Ser	Glu	His Met Pro
4010		4015			4020	
Asn Glu	Pro Arg Leu Ala	Arg	Phe Leu	Glu Thr	Ala	Gly Ser Val
4025		4030			4035	
Leu Asn	Tyr Phe Glu Ser	Phe	Leu Gly	Arg Ile	Glu	Ile Met Gly
4040		4045			4050	
Ser Ser	Lys Arg Ile Glu	Arg	Val Tyr	Phe Glu	Ile	Lys Glu Ala
4055		4060			4065	
Asn Ile	Glu Gln Trp Glu	Lys	Pro Gln	Ile Lys	Glu	Ser Lys Arg
4070		4075			4080	
Ala Phe	Phe Tyr Ser Ile	Val	Thr Glu	Gly Gly	Asp	Lys Glu Lys
4085		4090			4095	
Leu Glu	Ala Phe Val Asn	Phe	Cys Glu	Asp Ala	Ile	Phe Glu Met
4100		4105			4110	
Thr His	Ala Ser Gly Leu	Met	Ala Ser	Asp Asp	Asp	Gly Gly Thr
4115		4120			4125	
Val Arg	Arg Asp Gln Ala	Phe	Thr Tyr	Ile Ser	Glu	Glu Glu Glu
4130		4135			4140	
Glu Arg	Ala Ala Arg Asp	Pro	Ile Lys	Arg Thr	Ile	Gln Ala Val
4145		4150			4155	
Lys Asp	Gly Leu Ser Tyr	Ser	Met Tyr	Met Ile	Ser	Pro Ser Asn
4160		4165			4170	
Ile Lys	His Gln Ile Thr	Val	Leu Gln	Ser Lys	Ser	Phe Pro Glu
4175		4180			4185	
Ile Ile	Val Gly Phe Phe	Lys	Met Ile	Phe Tyr	Ala	Phe Tyr Tyr
4190		4195			4200	
Ser Gly	Phe Gly Val Ser	Val	Val Ile	Lys Tyr	Leu	Val Asn Ile
4205		4210			4215	
Leu Met	Ser Leu Met Arg	Gly	Pro Ala	Gln Glu	Glu	Glu Glu Pro
4220		4225			4230	

Ile	Pro	Glu	Ala	Glu	Pro	Ser	Leu	Arg	Ala	Leu	Pro	Pro	Leu	Pro
4235						4240					4245			
Leu	Glu	Glu	Pro	Pro	Gly	Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile
4250						4255					4260			
Ser	Lys	Glu	Glu	Asn	Gly	Gln	Tyr	Arg	Met	Ala	Pro	His	Glu	Ser
4265						4270					4275			
Pro	Ala	Leu	Ser	Pro	Ser	Ser	Ser	Ile	Glu	Glu	Thr	Gly	Glu	Ser
4280						4285					4290			
Ser	Pro	Glu	Asp	Gly	Ala	Ala	Glu	Leu	Thr	Gly	Glu	Gly	Val	Pro
4295						4300					4305			
Pro	Gly	Glu	Gln	Met	Thr	Leu	Val	Asp	Leu	Leu	Gly	Gly	Glu	Ala
4310						4315					4320			
Ala	Lys	Arg	Ala	Ala	Gln	Glu	Arg	Thr	Glu	Ala	Gln	Lys	Ala	Gln
4325						4330					4335			
Glu	Ala	Thr	Leu	Ala	Ser	Ile	Glu	Ala	Glu	Ser	Lys	Lys	Ala	Ser
4340						4345					4350			
Thr	Glu	Thr	Lys	Glu	Pro	Ala	Ala	Val	His	Gln	Ile	Asp	Phe	Ser
4355						4360					4365			
Lys	Tyr	Thr	Lys	Lys	Cys	Val	Ser	Tyr	Leu	Ala	Arg	Asn	Phe	Tyr
4370						4375					4380			
Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe	Cys	Ile	Asn	Phe
4385						4390					4395			
Met	Leu	Leu	Phe	Tyr	Lys	Val	Thr	Thr	Leu	Gly	Asp	Asp	Glu	Asp
4400						4405					4410			
Gly	Glu	Gly	Gly	Ser	Gly	Glu	Ser	Leu	Met	Gly	Leu	Gly	Ser	Gly
4415						4420					4425			
Leu	Gly	Ser	Gly	Leu	Gly	Ile	Leu	Glu	Thr	Gly	Ser	Gly	Gly	Gly
4430						4435					4440			
Glu	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Gly	Glu	Glu	Glu	Asp	Pro	Pro
4445						4450					4455			
Glu	Lys	Val	His	Val	Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val
4460						4465					4470			
Leu	Arg	Ile	Ala	Ala	Ile	Leu	His	Ser	Leu	Val	Ser	Leu	Cys	Met
4475						4480					4485			
Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys
4490						4495					4500			
Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu	Phe	Asp	Gly	Leu	Phe
4505						4510					4515			
Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Ile	Lys	Ser	His	Trp	Asp
4520						4525					4530			



Lys	Leu	Val	Ile	Ser	Ala	Lys	Thr	Phe	Pro	Val	Asn	Tyr	Trp	Asp
4535						4540					4545			
Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys	Tyr	Ser	Glu	Thr	Tyr
4550						4555					4560			
Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly	Met	Glu	Lys	Thr	Ala
4565						4570					4575			
Phe	Ala	Ala	Gln	Glu	Ala	Asn	Glu	Gly	Gly	Gly	Phe	Phe	His	Phe
4580						4585					4590			
Ile	Thr	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Ile	Trp	Lys	Ala	Gly	Val
4595						4600					4605			
Thr	Ile	Thr	Asp	Asn	Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser
4610						4615					4620			
Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Gln	Phe	Phe	Phe	Ala	Ala	His
4625						4630					4635			
Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu
4640						4645					4650			
Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met
4655						4660					4665			
Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn
4670						4675					4680			
Phe	Phe	Arg	Lys	Phe	Tyr	Val	Gln	Glu	Asp	Asp	Asp	Gly	Glu	Glu
4685						4690					4695			
Gly	Asp	Arg	Lys	Cys	His	Asp	Met	Ala	Thr	Cys	Phe	Val	Phe	His
4700						4705					4710			
Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Ile
4715						4720					4725			
Gly	Asp	Pro	Asp	Gly	Asp	Glu	Tyr	Glu	Val	Tyr	Arg	Ile	Leu	Phe
4730						4735					4740			
Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Val	Ile	Leu	Leu	Ala	Ile
4745						4750					4755			
Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln
4760						4765					4770			
Leu	Glu	Ser	Val	Lys	Glu	Asp	Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys
4775						4780					4785			
Gly	Ile	Gly	Lys	Asp	Tyr	Phe	Asp	Lys	Val	Pro	His	Gly	Phe	Asp
4790						4795					4800			
Thr	His	Val	Ala	Gln	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe
4805						4810					4815			
Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln
4820						4825					4830			

Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Cys Trp Asp Phe  
 4835 4840 4845

Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Glu Leu  
 4850 4855 4860

Gly Gly Gly Gly Ser  
 4865

<210> 58  
 <211> 5071  
 <212> PRT  
 <213> *Caenorhabditis elegans*

<400> 58  
 Met Ala Asp Lys Glu Glu Gln Gly Gly Gly Glu Gln Asp Asp Val Ser  
 1 5 10 15  
 Phe Leu Arg Thr Gly Asp Ile Val Cys Leu Ser Cys Val Ala Ser His  
 20 25 30  
 Asn Arg Asp Gly Val Leu Gly Ser Glu Arg Val Cys Leu Cys Thr Glu  
 35 40 45  
 Gly Phe Gly Asn Arg Met Cys Thr Leu Glu Asn Val Ser Asp Lys Asp  
 50 55 60  
 Ile Pro Pro Asp Ile Ala Met Cys Met Leu Tyr Ile Asp Asn Ala Leu  
 65 70 75 80  
 Ser Met Arg Ala Leu Gln Glu Met Met Ser Ala Asp Ser Asp His Lys  
 85 90 95  
 Ser Ala Ser Gly Ala Gly Gly His Lys Thr Leu Leu Tyr Gly His Ala  
 100 105 110  
 Val Gln Leu Lys His Val Gln Ser Glu Met Tyr Leu Ala Cys Leu Ser  
 115 120 125  
 Ser Cys Ser Ser Asn Asp Lys Leu Ala Phe Asp Val Gly Val Gln Glu  
 130 135 140  
 Thr Asn Glu Gly Glu Ala Cys Trp Trp Thr Ile His Pro Ala Ser Lys  
 145 150 155 160  
 Gln Arg Ser Glu Gly Glu Lys Val Arg Val Gly Asp Asp Val Ile Leu  
 165 170 175  
 Val Ser Val Ala Thr Glu Arg Tyr Leu His Met Ala Tyr Ser Lys Gly  
 180 185 190  
 Tyr Met Val Ile Ala Ser Phe His Gln Thr Leu Trp Asn Ile Gln Ser  
 195 200 205  
 Val Ser Ser Gly Ser Met Arg Thr Arg Asn Met Gly Phe Leu Phe Gly  
 210 215 220  
 Asn Asp Val Leu Arg Leu Phe His Gly Asn Asp Glu Cys Leu Thr Ile  
 225 230 235 240

Pro Glu Asn Trp Ser Glu His Pro Gln His Asn Met Val Ile Tyr Glu  
 245 250 255  
 Gly Gly Ala Ala Val Thr Gln Ala Arg Ser Leu Trp Arg Val Glu Leu  
 260 265 270  
 Ile Arg Met Lys Trp His Gly Ala Leu Val Gly Trp Glu Gln Val Phe  
 275 280 285  
 Arg Ile Lys His Ile Thr Ser Gly Arg Tyr Leu Gly Val Leu Asp Asn  
 290 295 300  
 Ser Val Gln Leu Tyr His Lys Glu Lys Ala Asp Phe Asp Leu Thr Ala  
 305 310 315 320  
 Phe Val Met Cys Gln Asn Lys Asp Pro Lys Lys Gln Met Leu Asp Glu  
 325 330 335  
 Lys Glu Glu Glu Gly Met Gly Asn Ala Thr Ile Arg Tyr Gly Glu Thr  
 340 345 350  
 Asn Ala Phe Ile Gln His Val Lys Thr Gln Leu Trp Leu Ser Tyr Gln  
 355 360 365  
 Thr Thr Glu Val Thr Lys Lys Gly Leu Gly Lys Val Glu Glu Lys Lys  
 370 375 380  
 Ala Val Ala Leu Lys Asp Gly His Met Asp Asp Cys Tyr Thr Phe Phe  
 385 390 395 400  
 Met Ala Leu Glu Glu Glu Ser Lys Ser Ala Arg Val Ile Arg Lys Cys  
 405 410 415  
 Ser Ser Val Leu Asn Lys Phe Leu Lys Gly Ile Asp Ala Leu Gln Leu  
 420 425 430  
 Glu Gly Asn Gln Ser Thr Asp Trp Thr Arg Val Asp Leu Asn Glu Val  
 435 440 445  
 Leu Lys Leu Met Glu Asp Leu Ile Glu Tyr Phe Ala Gln Pro Asn Asp  
 450 455 460  
 Glu Gln Asp Phe Glu Glu Lys Gln Asn His Leu Arg Ala Leu Arg Ser  
 465 470 475 480  
 Arg Gln Asp Leu Phe Gln Glu Glu Gly Val Leu Asn Met Ile Leu Asp  
 485 490 495  
 Thr Ile Asp Lys Phe Ser Gln Met Glu Ala Leu Pro Asp Phe Ala Gly  
 500 505 510  
 Leu Ile Gly Glu Glu Thr His Val Lys Trp Glu Gln Ile Ser Thr Tyr  
 515 520 525  
 Leu Tyr Leu Leu Val Ala Ala Met Ile Lys Gly Asn His Tyr Asn Cys  
 530 535 540  
 Ala Gln Phe Ala Ser Ala Gln Arg Leu Asp Trp Leu Phe Gly Arg Leu  
 545 550 555 560

Ser	Asn	Pro	Gln	Ser	Ala	Glu	Gly	Ile	Leu	Asp	Val	Leu	Tyr	Cys	Val	
				565					570					575		
Leu	Thr	Glu	Ser	Pro	Glu	Ala	Leu	Asn	Met	Ile	Asn	Glu	Gly	His	Ile	
			580					585					590			
Arg	Ser	Val	Ile	Ser	Leu	Leu	Glu	Lys	Val	Gly	Arg	Asp	Pro	Lys	Val	
		595					600					605				
Leu	Asp	Val	Leu	Ser	Ser	Leu	Cys	Glu	Gly	Asn	Gly	Met	Ala	Val	Arg	
	610					615					620					
Ser	Ser	Gln	Asn	Leu	Ile	Thr	Gln	Tyr	Leu	Leu	Pro	Gly	Lys	Asp	Leu	
625					630					635					640	
Leu	Leu	Gln	Thr	Ser	Met	Arg	Asp	His	Val	Ser	Ser	Met	Met	Pro	Asn	
				645					650					655		
Val	Met	Leu	Gly	Val	Val	Glu	Gly	Ser	Ala	Leu	Phe	Arg	Lys	Trp	Tyr	
			660					665					670			
Phe	Glu	Ala	Glu	Val	Glu	His	Ile	Glu	Thr	Met	Thr	Lys	Gln	Thr	Pro	
		675					680					685				
Tyr	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Ser	Val	Gly	Phe	Lys	Pro	Phe	Pro	
	690					695					700					
Gly	Ser	Gly	Asp	Lys	Met	Gly	Cys	Asn	Gly	Val	Gly	Asp	Asp	Phe	Tyr	
705					710					715					720	
Ser	Tyr	Gly	Phe	Asp	Gly	Lys	Ser	Met	Tyr	Phe	Gly	Gly	Lys	Ser	Arg	
				725					730					735		
Arg	Val	Gly	His	Lys	Leu	Leu	Glu	Lys	Gly	Asp	Val	Ile	Gly	Cys	Ser	
			740					745					750			
Ile	Asp	Leu	Thr	Ile	Pro	Glu	Ile	Lys	Phe	Ser	Val	Asn	Gly	Thr	Tyr	
	755						760					765				
Met	Ser	Gly	Ser	Phe	Lys	Lys	Phe	Asn	Ile	Asp	Gly	Tyr	Phe	Phe	Pro	
	770					775					780					
Val	Met	Ser	Leu	Ser	Ala	Lys	Val	Ser	Cys	Arg	Phe	Ile	Leu	Gly	Gly	
785					790					795					800	
Asn	Gln	Gly	Arg	Leu	Arg	Tyr	Gly	Pro	Pro	Thr	Gly	Phe	Ser	Ala	Val	
				805					810					815		
Val	Glu	Ala	Val	Asn	Gly	Glu	Leu	Gln	Ile	Thr	Asp	Cys	Leu	Ser	Phe	
			820					825					830			
Gly	Asp	Leu	Gly	Lys	Asn	Ile	Phe	Ser	Gly	Pro	Gln	Thr	Ile	Phe	Asn	
		835					840					845				
Asn	Leu	Glu	Pro	Phe	Ile	Pro	Thr	Pro	Ile	Asp	Val	Ser	Ala	Thr	Gln	
						855					860					
Leu	Asn	His	His	Ala	Thr	Glu	Met	His	Gln	Lys	Tyr	Ala	Glu	Asn	Leu	
865					870					875					880	

His Glu Leu Trp Ala Met Arg Lys Ile Glu Leu Gly Trp Ser Tyr Gly  
 885 890 895  
 Glu Thr Arg Ser Glu Thr Ser Arg Lys His Pro Cys Leu Thr Lys Phe  
 900 905 910  
 Glu Tyr Leu Pro Glu Thr Glu Lys Lys Tyr Asn Ile Leu Leu Ala Leu  
 915 920 925  
 Thr Thr Met Lys Thr Ile Glu Ala Leu Gly Tyr His Leu Ile Thr Glu  
 930 935 940  
 Asp Pro Pro Cys Arg Leu Arg Ala Val Arg Leu Gly Pro Asn Phe Gln  
 945 950 955 960  
 Gln Gln Asn Gly Tyr Lys Pro Gly Pro Leu Asp Thr His Glu Ile Gln  
 965 970 975  
 Leu Pro Ala Glu Leu Gln Pro Leu Thr Glu Ala Leu Ala Arg Asn Thr  
 980 985 990  
 His Asn Ile Trp Ala Lys Glu Lys Ile Lys Arg Gly Trp Thr Phe Gly  
 995 1000 1005  
 Leu Ser Glu His Val Asp Ala Thr Gln Lys Arg Ser Pro His Leu  
 1010 1015 1020  
 Val Pro Tyr Glu Gln Val Asp Glu Arg Ile Lys Gln Ala Asn Arg  
 1025 1030 1035  
 Glu Ser Ala Ala Glu Asn Ile Arg Ala Leu Gln Leu Phe Gly Ile  
 1040 1045 1050  
 Phe Leu Glu Pro Pro Ala His Glu His Asp Glu Val Ala Glu Lys  
 1055 1060 1065  
 Glu Leu Arg Ala Arg Lys Asp Asn Thr Arg Thr Tyr Arg Ala Glu  
 1070 1075 1080  
 Ala Thr Tyr Ala Val Cys Gly Gly Lys Trp Tyr Phe Glu Phe Glu  
 1085 1090 1095  
 Ile Leu Thr Ala Gly Tyr Met Lys Ile Gly Trp Met Asp Ile Gly  
 1100 1105 1110  
 Ser Thr Pro Glu Ile Gln Leu Gly Ala Asp Asp Arg Ser Tyr Ala  
 1115 1120 1125  
 Phe Asp Gly Tyr Leu Gly Arg Lys Trp His Gln Gly Ala Glu Thr  
 1130 1135 1140  
 Tyr Gly Lys Glu Trp Lys Ile Gly Asp Val Val Gly Cys Phe Leu  
 1145 1150 1155  
 Asp Leu Asn Asp Arg Thr Ile Ser Phe Ser Leu Asn Gly Glu Leu  
 1160 1165 1170  
 Leu Leu Asp Pro Ser Gly Ser Glu Met Ala Phe Asp Asn Val Val  
 1175 1180 1185



Pro	Leu	Ser	Gly	Pro	Gly	Arg	Gln	Leu	Thr	Ile	Lys	Arg	Ser	Ser
1490						1495					1500			
Ile	Lys	Lys	Asn	Lys	Lys	Gly	Lys	Lys	Ala	Glu	Ile	Ala	Leu	Glu
1505						1510					1515			
Lys	Met	Glu	Arg	Glu	Lys	Lys	Gly	Ser	Ile	Ile	Pro	Met	Asp	Ala
1520						1525					1530			
Gln	Leu	Asp	Val	Leu	Gln	Glu	Gly	Asp	Ala	His	Ala	Leu	Val	His
1535						1540					1545			
His	Lys	Asp	Lys	Val	Asp	Glu	Tyr	Tyr	Tyr	Gly	Ile	Arg	Ile	Phe
1550						1555					1560			
Pro	Gly	Gln	Asp	Pro	Ser	Gln	Val	Trp	Val	Gly	Trp	Val	Thr	Thr
1565						1570					1575			
Gln	Tyr	His	Tyr	Tyr	Asn	Val	Asn	Phe	Asp	Gly	Ser	Gln	Gly	Val
1580						1585					1590			
Arg	Lys	Cys	Arg	Phe	Ser	Glu	Ala	Asp	His	His	Gly	Thr	Thr	Val
1595						1600					1605			
Asp	Ser	Val	Gln	Ser	Gln	Asn	Cys	Tyr	Met	Val	Asn	Val	Ser	Glu
1610						1615					1620			
Leu	Leu	Ala	Thr	Thr	Pro	Asp	Val	Ala	Asn	Thr	Lys	Val	Ser	Gly
1625						1630					1635			
Thr	Leu	Ile	Gly	Cys	Ile	Ile	Asp	Thr	Ser	Ile	Gly	Glu	Leu	Ser
1640						1645					1650			
Phe	Gln	Val	Gly	Ser	Thr	Asp	Thr	Gly	Ile	Lys	Phe	Lys	Leu	Glu
1655						1660					1665			
Pro	Gly	Ala	Met	Leu	Phe	Pro	Ala	Ala	Phe	Val	Thr	Pro	Thr	Ala
1670						1675					1680			
Thr	Glu	Ile	Leu	Gln	Phe	Glu	Leu	Gly	Arg	Ile	Lys	Tyr	Thr	Phe
1685						1690					1695			
Pro	Leu	Ser	Ala	Ala	Met	Phe	Lys	Ser	Cys	Glu	Lys	Ser	Leu	Val
1700						1705					1710			
Pro	Phe	Cys	Pro	Pro	Arg	Leu	Thr	Val	Glu	Gln	Ile	Glu	Ser	Val
1715						1720					1725			
Tyr	Trp	Ala	Arg	Val	Pro	Asn	Glu	Thr	Leu	Arg	Thr	Thr	Ala	Leu
1730						1735					1740			
Lys	Leu	Ser	Glu	Val	Arg	Gly	Trp	Ser	Val	Leu	Cys	Asn	Asp	Pro
1745						1750					1755			
Val	Arg	Ile	Met	Ser	Val	Tyr	Ile	Pro	Glu	Lys	Asp	Gln	Ser	Leu
1760						1765					1770			
Asp	Ile	Leu	Glu	Met	Ile	Glu	Met	Pro	Asp	Met	Leu	Glu	Phe	His
1775						1780					1785			

Arg	Gln	Thr	Leu	Asn	Leu	Tyr	Cys	Lys	Leu	Ala	Ser	His	Gly	Asn
1790						1795					1800			
His	Lys	Val	Ala	His	Thr	Leu	Cys	Gln	His	Ile	Asp	Glu	Asp	Gln
1805						1810					1815			
Ile	Met	Tyr	Ala	Ile	Lys	Ser	His	Tyr	Leu	Ser	Gly	Pro	Met	Arg
1820						1825					1830			
Gln	Gly	Phe	His	Asp	Leu	Leu	Ile	Gly	Leu	His	Leu	Met	Ser	His
1835						1840					1845			
Thr	Ala	Ala	Arg	Asn	Ser	Met	Ala	Lys	Glu	Tyr	Val	Ile	Pro	Leu
1850						1855					1860			
Val	Pro	Gln	Leu	Gln	Ile	Lys	Asn	Val	Leu	Asp	Pro	Asp	Ser	Glu
1865						1870					1875			
Ser	Arg	Tyr	Pro	Gln	Ile	Thr	Gly	Glu	Ser	Val	Ser	Met	Leu	Ser
1880						1885					1890			
Gln	Met	Ala	Ser	Glu	Pro	Val	Lys	Lys	His	Val	Ser	Arg	Glu	Asp
1895						1900					1905			
Glu	Met	Lys	Leu	Leu	Pro	Pro	Ser	Val	Asp	Phe	Glu	Ala	Leu	Lys
1910						1915					1920			
Lys	His	Val	Met	Glu	Ser	Leu	Gln	Ser	Ala	Thr	His	His	Ala	Val
1925						1930					1935			
Met	Asn	Cys	Arg	Asp	Leu	Ile	Gly	Gly	Asp	Asn	Thr	Asn	His	Phe
1940						1945					1950			
Glu	Pro	Leu	Phe	Lys	Leu	Phe	Asp	Gln	Leu	Leu	Val	Ile	Gly	Leu
1955						1960					1965			
Ile	Asn	Asp	Glu	Glu	Leu	Glu	Cys	Leu	Leu	Arg	Leu	Ile	His	Pro
1970						1975					1980			
Gln	Ala	Phe	Asp	Glu	Asn	Tyr	Glu	Thr	Gly	Thr	Thr	Gln	Lys	Gly
1985						1990					1995			
Leu	Thr	Gln	Leu	Glu	Leu	Ala	Glu	Pro	Val	Lys	Ile	Gln	Leu	Val
2000						2005					2010			
Ser	Ile	Leu	Asp	His	Leu	Cys	Asp	Ile	Gln	Leu	Arg	Tyr	Arg	Ile
2015						2020					2025			
Glu	Ser	Leu	Val	Ala	Phe	Thr	Glu	Gly	Phe	Val	Gly	Glu	Leu	Gln
2030						2035					2040			
Ser	Asp	Gln	Cys	Lys	Arg	Tyr	Met	Glu	Ile	Lys	Gln	Thr	Asp	Met
2045						2050					2055			
Pro	Pro	Ala	Glu	Ala	Ala	Lys	Lys	Thr	Lys	Glu	Phe	Arg	Cys	Pro
2060						2065					2070			
Pro	Lys	Glu	Gln	Met	Phe	Arg	Leu	Leu	Met	Cys	Lys	Val	Lys	Glu
2075						2080					2085			



Glu	Arg	Asp	Pro	Glu	Leu	Met	Glu	Glu	Asp	Ala	Asp	Val	Asp	Gln
2090						2095					2100			
Cys	Pro	Met	Ala	Glu	Gly	Leu	Gln	Gln	Gln	Leu	Arg	Asp	Phe	Cys
2105						2110					2115			
Glu	Leu	Leu	Val	Gly	Lys	Ile	Gly	Asn	Val	Lys	Glu	Gly	Asp	Ser
2120						2125					2130			
Asp	Asp	Gln	Leu	Ala	Leu	Ile	Glu	Ser	Glu	Glu	Gly	Ser	Trp	Val
2135						2140					2145			
Asp	Ser	Phe	Ala	Arg	Ile	Val	Val	Lys	Val	Pro	Pro	Pro	Val	Leu
2150						2155					2160			
Glu	Glu	Gly	Met	Glu	Met	Gln	Lys	Lys	Gly	Thr	Gln	Asn	Phe	Arg
2165						2170					2175			
Glu	Ile	Ile	Val	Thr	Met	Leu	Arg	Glu	Trp	Ala	Gln	Ala	Asp	Phe
2180						2185					2190			
Ile	Glu	Ser	Lys	Ser	Leu	Ile	Arg	Asn	Met	Phe	Arg	Leu	Leu	Leu
2195						2200					2205			
Arg	Gln	Tyr	Ser	Gly	Ile	Arg	Glu	Ile	Arg	Asp	Ala	Met	Ser	Gln
2210						2215					2220			
Thr	Tyr	Val	Phe	His	Glu	Arg	Asn	Glu	Lys	Asp	Val	Thr	Asp	Phe
2225						2230					2235			
Leu	Val	Tyr	Leu	Ile	Gln	Ile	Arg	Glu	Leu	Leu	Thr	Val	Gln	Phe
2240						2245					2250			
Glu	His	Thr	Glu	Glu	Ala	Ile	Leu	Lys	Arg	Gly	Leu	Trp	Lys	Leu
2255						2260					2265			
Met	Asn	Asn	Arg	Ile	Phe	Phe	Gln	His	Pro	Asp	Leu	Met	Arg	Leu
2270						2275					2280			
Leu	Ser	Val	His	Glu	Asn	Val	Met	Ser	Ile	Met	Met	Asn	Ile	Leu
2285						2290					2295			
Thr	Ala	Gln	Gln	Gly	Thr	Val	Glu	His	Glu	Gly	Asp	Glu	Leu	Lys
2300						2305					2310			
Glu	Lys	Ala	Pro	Ile	Lys	Asp	Ala	Ser	Glu	Met	Val	Val	Ala	Cys
2315						2320					2325			
Ser	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Ser	Arg	Gln	Asn	Gln
2330						2335					2340			
Lys	Ala	Met	Phe	Glu	His	Leu	Ser	Phe	Leu	Leu	Asp	Asn	Ala	Thr
2345						2350					2355			
Met	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Val	Pro	Leu	Asp
2360						2365					2370			
Val	Ala	Tyr	Ser	Ser	Phe	Met	Asp	Asn	Asn	Glu	Leu	Ala	Leu	Ala
2375						2380					2385			

Leu Lys	Glu Glu Glu	Leu Asp	Lys Val Ala Val	Tyr	Leu Ser Arg
2390		2395		2400	
Cys Gly	Leu Gln Pro Asn	Ser	Glu Leu Ile Thr	Lys	Gly Tyr Pro
2405		2410		2415	
Asp Ile	Gly Trp Asp Pro	Val	Glu Gly Glu Arg	Tyr	Ile Asp Phe
2420		2425		2430	
Leu Arg	Phe Cys Val Trp	Ile	Asn Gly Glu Asn	Val	Glu Glu Asn
2435		2440		2445	
Ala Asn	Leu Val Ile Arg	Leu	Leu Ile Arg Arg	Pro	Glu Cys Leu
2450		2455		2460	
Gly Val	Ala Leu Lys Gly	Glu	Gly Gln Gly Leu	Phe	Ser Ala Phe
2465		2470		2475	
Lys Glu	Ala Ile Ala Leu	Ser	Glu Asp Ile Arg	Leu	Leu Glu Asn
2480		2485		2490	
Asp Ser	His Pro Ser Leu	Leu	Ser Ser Gly Leu	Leu	Gly Glu Asn
2495		2500		2505	
Pro Thr	Tyr Pro Ser Lys	Asp	Ala Glu Gly Glu	Asp	Tyr Ile Asp
2510		2515		2520	
Leu Gly	Ala Ala Thr Leu	Asp	Phe Tyr Ser Ser	Leu	Val Asp Leu
2525		2530		2535	
Leu Ala	Lys Cys Ala Pro	Asp	Pro Met Ala Ile	Gln	Ala Gly Lys
2540		2545		2550	
Gly Asp	Ser Leu Arg Ala	Arg	Ala Ile Leu Arg	Ser	Leu Ile Ser
2555		2560		2565	
Leu Asp	Asp Leu Gly Gln	Ile	Leu Ala Leu Arg	Phe	Thr Ile Pro
2570		2575		2580	
Asn Leu	Ala Ala Pro Ser	Ile	Glu Asp Thr Gly	Pro	Leu Pro Gly
2585		2590		2595	
Leu Leu	Pro Asn His Lys	Gly	Ser Val Leu Leu	Phe	Leu Asp Arg
2600		2605		2610	
Val Tyr	Gly Ile Asp Gln	Gln	Asp Met Leu Phe	His	Val Leu Glu
2615		2620		2625	
Gln Ser	Phe Leu Pro Asp	Leu	Arg Ala Ala Thr	Met	Met Asp Ser
2630		2635		2640	
Pro Arg	Ala Leu Glu Ser	Asp	Thr Ala Leu Ala	Leu	Asn Arg Tyr
2645		2650		2655	
Leu Cys	Asn Ser Val Leu	Pro	Leu Leu Thr Asn	His	Ser His Phe
2660		2665		2670	
Phe Ala	Asp Ala Glu His	His	Ser Ala Leu Leu	Asp	Ala Thr Leu
2675		2680		2685	

His Thr	Val Tyr Arg Met Asn	Arg Leu Lys Ser Leu	Thr Lys Asn
2690	2695	2700	
Gln Arg	Asp Ala Val Ser Asp	Phe Leu Val Ala Ile	Thr Arg Glu
2705	2710	2715	
Leu Pro	Pro Ala Met Met Ile	Lys Leu Leu Lys Lys	Val Ile Thr
2720	2725	2730	
Asp Ile	Leu Thr Met Asn Asp	Met Asn Val Leu Val	Pro Leu Arg
2735	2740	2745	
Leu Ile	Thr Leu His Tyr Glu	Arg Cys Gly Lys Tyr	Tyr Gly Ser
2750	2755	2760	
Gly Asn	His Tyr Gly Val Ala	Ser Glu Gln Glu Lys	Arg Leu Ser
2765	2770	2775	
Met Leu	Leu Phe Asp Ala Ile	Phe Asp Thr Leu Gly	Ser Arg Pro
2780	2785	2790	
Tyr Asp	Pro Glu Leu Phe Gly	Lys Ala Leu Pro Cys	Met Thr Ala
2795	2800	2805	
Ile Gly	Ser Ala Ile Ser Pro	Asp Tyr Thr Leu Thr	Ser Gly Leu
2810	2815	2820	
Glu Asp	Val Arg Asn Lys Arg	Arg Glu Glu Glu Gly	Ala Trp Ile
2825	2830	2835	
Pro Arg	Thr Val Asp Val Ser	Arg Cys Glu Ile Asn	Arg Asp Leu
2840	2845	2850	
Glu Lys	Met Thr Glu Leu Phe	Ala Glu His Phe His	Asp Ser Trp
2855	2860	2865	
Ala Ser	Arg Lys Leu Glu Lys	Gly Trp Val His Gly	Asp Leu Tyr
2870	2875	2880	
Ser Arg	Ala Asn Phe Thr His	Pro Arg Leu Lys Pro	Phe Ala Leu
2885	2890	2895	
Leu Lys	Asp Phe Glu Lys Ser	Phe Tyr Lys Glu Arg	Cys Ser Glu
2900	2905	2910	
Cys Leu	Lys Ala Leu Met Ala	Trp Asn Tyr Ser Phe	Glu Met Met
2915	2920	2925	
Asp Arg	Asp Ala Asn Asp Arg	Ala Ser Ala Ala Arg	Thr Leu Ser
2930	2935	2940	
Gly Thr	Ser Ile Ser Asn Phe	Ala Pro Lys Pro Ile	Asp Leu Ser
2945	2950	2955	
Ser Met	Thr Leu Glu Lys Asp	Met Val Asn Ala Ala	Glu Lys Met
2960	2965	2970	
Ala Glu	His Ser His Leu Ile	Trp Ala Lys Lys Val	Met Asn Asp
2975	2980	2985	

Leu	Asn	Thr	Lys	Gly	Gly	Phe	Met	Pro	Ile	Pro	Leu	Val	Pro	Trp
2990						2995					3000			
Asp	Leu	Leu	Thr	Asp	Phe	Glu	Arg	Arg	Lys	Asp	Arg	Phe	Arg	Ala
3005						3010					3015			
Ser	Glu	Ile	Leu	Lys	Phe	Leu	Gln	Tyr	His	Gly	Tyr	His	Val	Asn
3020						3025					3030			
Cys	Pro	Lys	Asp	Glu	Gln	Ser	Gln	Asn	Asp	Arg	Leu	Lys	Ser	Glu
3035						3040					3045			
Gly	Glu	Arg	Thr	Ser	Val	Glu	Lys	Arg	Phe	Ala	Tyr	Asn	Leu	Leu
3050						3055					3060			
Glu	Lys	Leu	Ile	Thr	Tyr	Leu	Glu	Gln	Ala	Ser	Leu	Lys	Met	Lys
3065						3070					3075			
Ser	Val	Lys	Pro	Ser	Gln	Glu	Leu	Thr	Arg	Arg	Asn	Ser	Phe	Lys
3080						3085					3090			
Lys	Glu	Gly	Gln	Asp	Val	Lys	Phe	Phe	Glu	Lys	Val	Val	Leu	Pro
3095						3100					3105			
Leu	Met	His	Ala	Tyr	Phe	Asn	Ala	His	Lys	Asn	Tyr	Phe	Leu	Glu
3110						3115					3120			
Gly	Ser	Ser	Ile	Val	Gln	Thr	Gly	Thr	Ala	Ser	Asn	Lys	Glu	Lys
3125						3130					3135			
Glu	Met	Val	Ala	Asn	Leu	Phe	Cys	Arg	Leu	Ala	Ala	Leu	Leu	Arg
3140						3145					3150			
Ile	Lys	Asn	Arg	Ala	Phe	Gly	Ser	Val	Ala	Lys	Ile	Thr	Val	Lys
3155						3160					3165			
Cys	Leu	Gln	Gly	Leu	Thr	Gln	Ala	Leu	Asp	Leu	Arg	Thr	Leu	Val
3170						3175					3180			
Lys	Val	Asn	Ser	Asp	Ile	Val	Arg	Thr	Ser	Leu	Leu	Thr	Phe	Phe
3185						3190					3195			
Asn	Asn	Cys	Ala	Asp	Asp	Leu	Tyr	Ala	Ser	Val	Asn	Glu	Leu	Lys
3200						3205					3210			
Asp	Gly	Gly	Gln	Tyr	Ser	Leu	Ile	Arg	Gly	Gln	Ala	Leu	Lys	Ser
3215						3220					3225			
Trp	Asn	Ser	Phe	Glu	Phe	Ala	Asn	Gln	Met	Ile	Val	Pro	Val	Leu
3230						3235					3240			
Thr	Thr	Met	Phe	Ala	His	Leu	Ala	Arg	Asn	His	Phe	Gly	Thr	Asp
3245						3250					3255			
Leu	Leu	Leu	Asp	Asp	Ile	Gln	Ala	Ala	Cys	Tyr	Lys	Ile	Leu	Asp
3260						3265					3270			
Ser	Leu	Tyr	Met	Val	Thr	Gly	Leu	Ser	Ser	Ser	Ile	Ser	His	Arg
3275						3280					3285			

Lys	Ser	Ile	Ser	Gly	Glu	Ser	Glu	Lys	His	Arg	Pro	Gly	Leu	Gly
3290						3295					3300			
Gln	Cys	Leu	Ala	Ala	Phe	Ala	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu
3305						3310					3315			
Glu	Pro	Glu	Phe	Asn	Lys	Ser	Asn	Lys	Phe	Ser	Val	Leu	Ala	Lys
3320						3325					3330			
Ser	Gln	Asp	Gln	Ser	Val	Gln	Val	Gln	Glu	Met	Leu	Gln	Asn	Leu
3335						3340					3345			
Ser	Thr	His	Ile	Pro	His	Leu	Glu	Lys	Leu	Leu	Thr	Asp	Leu	Glu
3350						3355					3360			
Thr	Val	Ala	Asn	Asn	Asn	Thr	Met	Tyr	Ser	Asp	Val	Pro	Asn	Val
3365						3370					3375			
Tyr	Asp	Val	Asp	Leu	Pro	Leu	Met	Cys	Ser	Tyr	Met	Ala	His	Trp
3380						3385					3390			
Phe	Ser	Val	Gly	Pro	Asp	Gly	Lys	Arg	Asp	Lys	Glu	Asp	Gln	Arg
3395						3400					3405			
Ala	Ser	Val	Val	Gln	Thr	Thr	Ser	Val	Ser	Cys	Asp	His	Ile	Asn
3410						3415					3420			
Arg	Ile	Phe	Asn	Ala	Leu	Leu	Lys	Met	Ile	Arg	Asn	His	Val	Gly
3425						3430					3435			
Ile	Glu	Asn	Ala	Pro	Trp	Leu	Cys	Arg	Val	Asn	Phe	Phe	Ala	Val
3440						3445					3450			
Gln	Ile	Ile	Gln	Asn	Val	Thr	Ser	Asp	Pro	Val	Arg	Glu	Phe	Val
3455						3460					3465			
Leu	Pro	Ile	Ala	Glu	Arg	Leu	Arg	Arg	Met	Ser	Glu	Lys	Ala	Tyr
3470						3475					3480			
Lys	Glu	Glu	Glu	His	Met	Arg	Thr	His	Pro	Asp	Asp	Ala	Asp	Glu
3485						3490					3495			
Gly	Thr	Val	Ala	Glu	Asp	Asn	Ala	Arg	Leu	Val	Arg	Asp	Thr	Tyr
3500						3505					3510			
Ala	Phe	Phe	Pro	Ile	Leu	Met	Lys	Tyr	Thr	Asp	Leu	His	Arg	Ala
3515						3520					3525			
Gln	Trp	Leu	Lys	Thr	Pro	Thr	Trp	Glu	Thr	Asp	Gly	Val	Tyr	Glu
3530						3535					3540			
Asn	Val	Ala	Val	Ile	Phe	Arg	Ile	Trp	Ser	Gln	Ser	Gln	His	Phe
3545						3550					3555			
Lys	Arg	Glu	Glu	Leu	Asn	Tyr	Val	Ala	Gln	Phe	Glu	Glu	Asp	Ala
3560						3565					3570			
Ala	Ala	Thr	Gly	Gly	Gly	Asp	Met	Lys	Thr	Gly	Lys	Ala	Ala	Ile
3575						3580					3585			

Ala	Glu	Arg	Lys	Lys	Lys	Arg	Arg	Glu	Gly	Gln	Ile	Lys	Lys	Asp
3590						3595					3600			
Lys	His	Ala	Ala	Ser	Ile	Val	Ile	Ala	Cys	Leu	Lys	Arg	Leu	Leu
3605						3610					3615			
Pro	Val	Gly	Leu	Asn	Val	Phe	Gly	Gly	Arg	Glu	Leu	Asp	Ile	Val
3620						3625					3630			
Gln	Gln	Ser	Lys	Glu	Lys	Phe	Ile	Gln	Lys	Glu	Thr	Glu	Glu	Lys
3635						3640					3645			
Ile	Arg	Glu	Phe	Ile	Lys	Gly	Leu	Leu	Glu	Ile	Pro	Val	Lys	Thr
3650						3655					3660			
Asp	Pro	Thr	Asp	Lys	Asn	Ala	Trp	Gln	Leu	Ser	Leu	Tyr	Arg	Lys
3665						3670					3675			
Ile	Gly	Lys	Ser	Gln	Met	Arg	Gly	Lys	Asp	Glu	Met	Ser	Gln	Asp
3680						3685					3690			
Ala	Val	Ile	Glu	Lys	Ile	Phe	Asn	Met	Gly	Gln	Val	Ser	Ala	Ile
3695						3700					3705			
Leu	His	Thr	Met	Thr	Ser	Arg	Met	Glu	Lys	Glu	Asp	Ile	Trp	Lys
3710						3715					3720			
Lys	Val	Leu	Thr	Leu	Gln	Arg	Lys	Arg	Met	Ala	Ile	Ser	Leu	Ile
3725						3730					3735			
Thr	Ala	Ser	His	Leu	Tyr	Lys	Thr	Glu	Leu	His	Arg	Gly	Ile	Asn
3740						3745					3750			
Phe	Phe	Leu	Pro	Ala	Phe	Ser	Arg	Leu	Trp	Met	Glu	Glu	Glu	Asp
3755						3760					3765			
Ala	Gly	Gln	Asp	Gln	Leu	Ile	Ala	Asp	Ile	Cys	Ser	Gly	Val	Glu
3770						3775					3780			
Glu	Glu	Glu	Gly	Pro	Arg	Ile	Glu	Ile	Ile	Met	Glu	Glu	Gly	Val
3785						3790					3795			
Pro	Ile	Val	Ala	Ser	Ser	Glu	Asp	Thr	Lys	Glu	Lys	Glu	Thr	Asn
3800						3805					3810			
Pro	Asp	Pro	Leu	Lys	Gln	Leu	Ile	Arg	Cys	Phe	Gln	Arg	Ala	Ala
3815						3820					3825			
Thr	Ser	Glu	Glu	Thr	Ala	Ala	Ser	Ala	Ile	His	Glu	Asp	Ser	Leu
3830						3835					3840			
Tyr	Ile	Arg	Phe	Ala	Asp	Val	Met	Ala	Lys	Ser	Ile	His	Ile	Glu
3845						3850					3855			
Glu	Glu	Asp	Gly	Glu	Asp	Gly	Glu	Glu	Gly	Glu	Ile	Asp	Gln	Ala
3860						3865					3870			
Ala	Lys	Glu	Glu	Gln	Ser	Gln	Ala	Leu	Arg	Gly	Glu	Gln	Ala	Val
3875						3880					3885			

Leu	Ala	Ser	Arg	Gly	Ala	Ala	Ile	Met	Cys	Leu	Met	Tyr	Leu	Ser
3890						3895					3900			
Ala	Ser	Gly	Gly	Glu	Pro	Asn	Glu	Met	Val	Ala	Gln	Thr	Leu	Gln
3905						3910					3915			
Leu	Gly	Ile	His	Leu	Leu	Ser	Gly	Gly	Asn	Val	Glu	Ile	Gln	Lys
3920						3925					3930			
Met	Leu	Ile	Glu	Tyr	Leu	Gln	Leu	Lys	Lys	Asp	Val	Arg	Phe	Phe
3935						3940					3945			
Thr	Ser	Met	Ala	Gly	Leu	Met	Asn	Lys	Cys	Ser	Val	Leu	Asn	Leu
3950						3955					3960			
Glu	Met	Phe	Glu	Arg	Gln	Ile	Lys	Ala	Glu	Gly	Leu	Gly	Met	Gly
3965						3970					3975			
Ala	Glu	Leu	Ala	Ser	Gly	Asp	Asn	Gln	Asn	Leu	Asn	Asp	Ala	Asp
3980						3985					3990			
Phe	Thr	Cys	Ser	Leu	Phe	Arg	Phe	Leu	Gln	Leu	Thr	Cys	Glu	Gly
3995						4000					4005			
His	Asn	Leu	Glu	Phe	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Pro	Gly	His
4010						4015					4020			
Thr	Thr	Ser	Val	Asn	Leu	Ile	Asn	Cys	Thr	Val	Asp	Tyr	Leu	Leu
4025						4030					4035			
Arg	Leu	Gln	Glu	Ser	Val	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser
4040						4045					4050			
Lys	Glu	Val	Ile	Asp	Glu	Gly	Gly	Lys	Glu	Tyr	Phe	Leu	Arg	Ala
4055						4060					4065			
Ile	Gln	Val	Cys	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	Ser	Ile
4070						4075					4080			
Gln	Gly	Pro	Cys	Val	Gly	Asn	Gln	Met	Thr	Leu	Ala	Asn	Ser	Arg
4085						4090					4095			
Leu	Trp	Asp	Ala	Ile	Asn	Gly	Phe	Phe	Phe	Leu	Phe	Ala	His	Met
4100						4105					4110			
Met	Glu	Lys	Leu	Tyr	Lys	Asn	Ser	Thr	Gln	Leu	Glu	Leu	Leu	Arg
4115						4120					4125			
Glu	Phe	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Val	Leu	Met	Leu	Ser
4130						4135					4140			
Met	Leu	Glu	Gly	Asn	Val	Leu	Asn	Gly	Ser	Ile	Gly	Lys	Gln	Met
4145						4150					4155			
Val	Asp	Ala	Leu	Val	Glu	Ser	Gln	Pro	Ser	Val	Glu	Lys	Ile	Leu
4160						4165					4170			
Lys	Phe	Ser	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr	Thr	Ser
4175						4180					4185			

Gln	Ala	Phe	Gln	Asp	Phe	Asp	Thr	Asn	Gln	Asp	Gly	Trp	Ile	Ser
4190						4195					4200			
Pro	Lys	Glu	Phe	Gln	Arg	Ala	Met	Glu	Ser	Gln	Lys	Met	Tyr	Thr
4205						4210					4215			
Val	Glu	Asp	Ile	Thr	Tyr	Leu	Met	Met	Cys	Thr	Asp	Val	Asn	Asn
4220						4225					4230			
Asp	Gly	Lys	Val	Asp	Tyr	Met	Glu	Phe	Thr	Glu	Arg	Phe	His	Asn
4235						4240					4245			
Pro	Ala	Arg	Asp	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Val	Asn
4250						4255					4260			
Leu	Lys	Glu	His	Ile	Thr	Asn	Asp	Pro	Arg	Leu	Glu	Lys	Ile	Ile
4265						4270					4275			
Glu	Lys	Ala	Gln	Thr	Leu	Leu	Glu	Tyr	Phe	Asp	Pro	Phe	Leu	Gly
4280						4285					4290			
Arg	Ile	Glu	Ile	Met	Gly	Ser	Ser	Lys	Arg	Val	Glu	Lys	Ile	Tyr
4295						4300					4305			
Phe	Glu	Ile	Gln	Glu	Ser	Trp	Leu	Glu	Gln	Trp	Gly	Lys	Gln	Gln
4310						4315					4320			
Ile	Arg	Asp	Ser	Lys	Asn	Ser	Phe	Leu	Phe	Asn	Val	Leu	Gln	Asp
4325						4330					4335			
Asp	Gly	Gly	Asp	Gln	Gly	Lys	Leu	Glu	Ala	Phe	Ile	Asn	Phe	Cys
4340						4345					4350			
Glu	Asp	Thr	Ile	Phe	Glu	Met	Gln	His	Ala	Ala	Ala	Ile	Ser	Ser
4355						4360					4365			
Gly	Asp	Ser	Asp	Thr	Lys	Met	Glu	Arg	Ala	Ile	Lys	Gln	Arg	Asp
4370						4375					4380			
Tyr	Phe	Leu	Gln	Gln	Thr	Ser	Ala	Asp	His	Ile	Ser	Glu	Thr	Phe
4385						4390					4395			
Lys	Ser	Gly	Tyr	Asn	Tyr	Gly	Ile	Ser	Ala	Ala	Ser	Ala	Leu	Ser
4400						4405					4410			
Pro	Gln	Asn	Ile	Ser	Thr	Thr	Met	Arg	Asn	Val	Ser	Ser	Ser	Val
4415						4420					4425			
Arg	Gln	Met	Ser	Trp	Thr	Gln	Leu	Leu	Tyr	Ala	Val	Ile	Ile	Leu
4430						4435					4440			
Phe	Ile	Arg	Ala	Gly	Leu	Ala	Ile	Gly	Trp	Ala	Gly	Tyr	Leu	Leu
4445						4450					4455			
Leu	Met	Thr	Ile	Phe	Arg	Phe	Gly	Tyr	Phe	Leu	Thr	Thr	Ser	Ser
4460						4465					4470			
Glu	Glu	Glu	Glu	Ala	Ala	Arg	Gln	Glu	Lys	Glu	Gln	Ala	Lys	Met
4475						4480					4485			



Asn Asn	Glu His Pro Ser	Phe	Asn Pro Pro Ile	Ile	Gln Glu Phe
4490		4495		4500	
His His	Ser His Val Gly	Val	Thr Ala Phe Gly	Val	Gly Met Asn
4505		4510		4515	
Ala Asp	His Leu Asn Val	Asn	Ser Leu Pro Asp	Phe	Val Pro Pro
4520		4525		4530	
Glu Arg	Pro Glu Thr Pro	Glu	Thr Val Leu Glu	Glu	Glu Lys Pro
4535		4540		4545	
Leu Asn	Gln Glu Thr Ser	Pro	Pro Thr Ser Pro	Thr	Ser Pro Ala
4550		4555		4560	
Ser Lys	Ala Pro Ser Ile	Tyr	Glu Ser Ile Gly	Ala	Pro Gln Met
4565		4570		4575	
Val Gln	Leu Gln Ser Glu	Ala	Asp Phe Gln Gln	Gly	Gln Tyr Glu
4580		4585		4590	
Pro Lys	Ile Ala Glu Ser	Asn	Ser Thr Lys Ser	Arg	Gly Ser Ile
4595		4600		4605	
Leu Asn	Met Leu Ala Arg	Asn	Phe Lys Thr Ile	Glu	Lys Ile Thr
4610		4615		4620	
Leu Tyr	Leu Ala Phe Phe	Ile	Asn Val Ile Leu	Leu	Phe His Arg
4625		4630		4635	
Val Asp	Ile Ser His Ala	Glu	Asn Ala Glu Ala	Ala	Ser Glu Gly
4640		4645		4650	
Asp Asp	Asp Glu Asp Ala	Leu	Glu Ser Ile Phe	Ile	Thr Gly Met
4655		4660		4665	
Gln Phe	Pro Tyr Val Glu	Tyr	Glu Ile Thr Gly	Trp	Met Leu Ala
4670		4675		4680	
Gln Ile	Leu Tyr Trp Ile	Ser	Val Leu His Leu	Ser	Thr Ser Phe
4685		4690		4695	
Ala Leu	Leu Val Ser Phe	Tyr	Gln Leu Lys Ile	Pro	Leu Ile Thr
4700		4705		4710	
Phe Lys	Arg Glu Lys Glu	Ile	Ala Arg Lys Leu	Met	Phe Asp Gly
4715		4720		4725	
Cys Trp	Ile Thr Glu Glu	Asp	Ser Glu Glu Leu	Gly	Ile Val Asp
4730		4735		4740	
Thr Phe	Met Trp Tyr Leu	Asp	Arg Ile Val Val	Ser	Ala Lys Ser
4745		4750		4755	
Phe Pro	Met Met Tyr Trp	Asp	Lys Phe Val Arg	Arg	Lys Thr Arg
4760		4765		4770	
Ser Lys	Phe Lys Asp Gln	Val	Asp Glu Glu Thr	Leu	Thr Ser Ile
4775		4780		4785	

Leu Gly	Glu Glu Lys Met Ser	Thr Asp Ser Ser Tyr	Asp Tyr Arg
4790	4795	4800	
Tyr Ser	Cys Trp Leu Trp Ile	Gly Val Ile Leu Thr	Asn Gly Gln
4805	4810	4815	
Phe Leu	Tyr Arg Val Gly Tyr	Leu Leu Cys Ser Ala	Cys Gly Val
4820	4825	4830	
Phe Leu	Ser Pro Phe Phe Tyr	Ala Phe His Leu Ile	Asp Val Val
4835	4840	4845	
Leu Ser	Phe Pro Met Leu Lys	Ala Ile Leu Gln Ser	Val Thr His
4850	4855	4860	
Asn Leu	Gln Gln Leu Ile Leu	Thr Ile Met Met Thr	Leu Val Val
4865	4870	4875	
Val Tyr	Leu Tyr Thr Val Ile	Ala Phe Asn Phe Phe	Arg Lys Phe
4880	4885	4890	
Tyr Val	Gln Glu Gly Glu Glu	Gly Glu Glu Pro Asp	Arg Lys Cys
4895	4900	4905	
His Asn	Met Leu Thr Cys Phe	Ile Tyr His Phe Tyr	Ala Gly Val
4910	4915	4920	
Arg Ala	Gly Gly Gly Ile Gly	Asp Glu Leu Glu Ser	Pro Tyr Gly
4925	4930	4935	
Asp Asp	Leu Glu Tyr Pro Arg	Met Phe Tyr Asp Ile	Ser Phe Phe
4940	4945	4950	
Phe Phe	Val Ile Ile Ile Leu	Leu Ala Ile Met Gln	Gly Leu Ile
4955	4960	4965	
Ile Asp	Ala Phe Gly Glu Leu	Arg Asp Gln Gln Glu	Ser Ala Thr
4970	4975	4980	
Glu Lys	Leu Glu Ser Ser Cys	Phe Ile Cys Asp Ile	Gly Lys Glu
4985	4990	4995	
Thr Phe	Asp Arg Met Pro Arg	Gly Phe Glu Ile His	Thr Thr Lys
5000	5005	5010	
Glu His	Asn Phe Ala Asn Tyr	Leu Phe Phe Leu Gln	His Leu Val
5015	5020	5025	
Asn Lys	Asp Glu Thr Glu Tyr	Thr Gly Gln Glu Thr	Tyr Val Arg
5030	5035	5040	
Glu Lys	Tyr Asp Asn Arg Asp	Trp Asp Phe Phe Pro	Val Gly Glu
5045	5050	5055	
Cys Phe	Val Lys Gln Tyr Glu	Asp Gln Leu Leu Gln	Ser
5060	5065	5070	

<211> 5317  
 <212> PRT  
 <213> Hemicentrotus pulcherrimus

<400> 59

Met	Ala	Ser	Gln	Asp	Ala	Glu	Asp	Glu	Val	Ser	Phe	Leu	Arg	Thr	Gly	1	5	10	15
Asp	Gln	Leu	Asn	Leu	Val	Cys	Ser	Ser	Gln	Ser	Leu	Gly	His	Val	Leu	20	25	30	
Leu	Gly	Ala	Glu	Gly	Phe	Gly	Asn	Arg	Asn	Cys	Val	Leu	Glu	Glu	Ala	35	40	45	
Ser	Asn	Gln	Asn	Val	Pro	Pro	Asp	Leu	Ser	Ile	Cys	Val	Phe	Val	Leu	50	55	60	
Asn	Gln	Ala	Leu	Ser	Val	Arg	Ala	Leu	Gln	Glu	Met	Val	Ile	Thr	Asp	65	70	75	80
Gln	Ile	Asp	Gln	Gly	Gly	Gln	Ala	Gly	His	Arg	Thr	Leu	Leu	Tyr	Gly	85	90	95	
His	Ala	Met	Leu	Leu	Gln	His	Ser	Leu	Ser	Ser	Met	His	Leu	Ala	Cys	100	105	110	
Leu	Pro	Thr	Ser	Ser	Ser	Lys	Asp	Lys	Leu	Ala	Phe	Asp	Val	Gly	Leu	115	120	125	
Gln	Glu	Ser	Thr	Gln	Gly	Glu	Ala	Cys	Trp	Trp	Thr	Ile	His	Pro	Val	130	135	140	
Ser	Lys	Gln	Arg	Ser	Glu	Gly	Glu	Lys	Val	Arg	Val	Gly	Asp	Asp	Leu	145	150	155	160
Ile	Leu	Val	Asn	Val	Ala	Thr	Glu	Arg	Tyr	Leu	His	Leu	Ser	Val	Glu	165	170	175	
Arg	Asp	Asp	Gln	Pro	Met	Ile	Val	Val	Ala	Ser	Phe	Gln	Gln	Thr	Leu	180	185	190	
Trp	Thr	Val	Ala	Pro	Val	Ser	Ser	Gly	Ile	Val	Lys	Ile	Lys	Ala	Met	195	200	205	
Ala	Lys	Lys	Tyr	Gly	Asp	Thr	Glu	Lys	Val	Leu	Gly	Phe	Leu	Asn	Gly	210	215	220	
Leu	Asp	Thr	Leu	Arg	Phe	Ser	Arg	Gly	His	Met	Asp	Glu	Tyr	Leu	Thr	225	230	235	240
Val	Pro	Pro	Val	Gly	Cys	Lys	Asp	Asp	Asp	Asn	Ile	Ser	Glu	Val	Ser	245	250	255	
Tyr	Asp	Thr	Gly	Ala	Val	Ala	Gln	Tyr	Ala	Arg	Ser	Leu	Trp	Arg	Ala	260	265	270	
Glu	Leu	Ile	Leu	Lys	Lys	Trp	Asn	Gly	Ser	Tyr	Val	Ser	Trp	Gly	Pro	275	280	285	
Pro	Cys	Arg	Ile	Arg	His	Leu	Thr	Ser	Gly	Lys	Tyr	Leu	Ala	Val	Leu				

290	295	300
Glu Asn Gly Thr Val Cys Ile Val Pro Arg Lys Ser Cys Asn Leu Asp 305 310 315 320		
Asp Thr Ile Phe Cys Phe Gln Gln Ser Arg Glu Asp Leu Ala Asn Tyr 325 330 335		
Asp Ser Lys Gln Asp His Gly Met Gly Ser Ala Asp Ile Lys Tyr Gly 340 345 350		
Asp Ser Thr Val Leu Ile Gln His Met Lys Thr Gly His Trp Leu Ser 355 360 365		
Tyr Leu Val Val Glu Ser Val Val Gly Gly Arg Ala Ala Glu Arg Lys 370 375 380		
Val Val Met Leu Pro Glu Gly His Met Asp Asp Gly Phe Ser Val Val 385 390 395 400		
Arg Ala Arg Ala Glu Glu Ser Arg Ser Ala Gly Ile Ile Arg Lys Ser 405 410 415		
Thr Leu Leu Phe Asn Gln Phe Phe Asp Ala Leu Asp Ser Leu Arg Gly 420 425 430		
Glu Lys Glu Asp Asp Gln Leu Ala Trp Asn Ser Phe Asn Leu Ser Ser 435 440 445		
Val Val Asp Ile Leu Glu Asp Leu Ile Glu Tyr Phe Gly Glu Pro Glu 450 455 460		
Glu Asp Glu Asp His Glu Glu Lys Gln Lys Lys Leu Lys Ala Leu Arg 465 470 475 480		
Asn Arg Gln Asp Leu Phe His Glu Glu Gly Met Val Lys Leu Val Leu 485 490 495		
Glu Thr Ile Asp Lys Leu Ser Ile Phe Lys Ser Gly Arg Asp Phe Ala 500 505 510		
Ala Ile Val Gly Glu Asp Ala Gly Asp Leu Trp Gln Asp Ile Val Thr 515 520 525		
Tyr Leu Tyr Lys Leu Leu Ala Ala Met Ile Arg His Asn His Asn Asn 530 535 540		
Cys Ala Leu Phe Ala Gln Ser Val Arg Leu Asp Trp Leu Ile Asn Arg 545 550 555 560		
Leu Glu Ser Gln Gln Ala Ser Lys Gly Val Leu Glu Val Leu His Cys 565 570 575		
Val Leu Leu Gly Ser Pro Glu Ala Leu Asn Ile Ile Lys Glu Asn His 580 585 590		
Ile Lys Ser Met Ile Ser Gln Leu Glu Lys His Gly Arg Asp Pro Lys 595 600 605		
Val Leu Asp Val Leu Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val		

610				615				620							
Arg	Ser	Asn	Gln	Asn	Leu	Ile	Cys	Asp	Asn	Leu	Leu	Pro	Ser	Arg	Asp
625					630					635					640
Leu	Leu	Leu	Gln	Thr	Ala	Val	Val	Asp	Glu	Val	Val	Cys	Met	Arg	Pro
				645					650					655	
Asn	Val	Ser	Ile	Ser	Val	Asp	Lys	Asn	Ser	Thr	Val	Tyr	Lys	Lys	Trp
			660						665					670	
Tyr	Phe	Glu	Val	Ala	Ile	Asp	Lys	Gln	Glu	Ala	Gly	Thr	Ser	Arg	Pro
		675					680							685	
Val	His	Phe	Arg	Val	Gly	Trp	Ala	Thr	Thr	Gln	Gly	Phe	Arg	Thr	Tyr
		690				695					700				
Leu	Arg	Gly	Gly	Glu	Gly	Trp	Gly	Asn	Ser	Gly	Val	Val	Asp	Asp	Leu
705					710					715					720
Tyr	Ser	Phe	Gly	Phe	Asp	Gly	Leu	Asn	Leu	Trp	Thr	Gly	Gly	Val	Ser
				725					730					735	
Lys	Ala	Ala	Pro	Trp	Ser	Gly	Asn	Arg	Leu	Leu	Ser	Lys	Gly	Asp	Ile
			740						745					750	
Val	Gly	Val	Cys	Phe	Asp	Leu	Ser	Val	Pro	Arg	Ile	Leu	Tyr	His	Val
		755					760						765		
Asn	Gly	Ser	Pro	Ile	Lys	Ala	Ser	Phe	Glu	Gly	Ile	Asn	Leu	Glu	Gly
	770					775					780				
Met	Phe	Phe	Pro	Val	Leu	Ser	Phe	Ser	Ala	Arg	Val	Cys	Ala	Arg	Phe
785					790					795					800
Ile	Leu	Gly	Gly	Lys	His	Gly	Arg	Phe	Lys	Tyr	Ser	Pro	Pro	Lys	Gly
				805					810					815	
Phe	Ala	Ala	Val	Cys	Glu	Ser	Val	Leu	Pro	Lys	Glu	Arg	Leu	Lys	Ile
			820						825					830	
Glu	Pro	Cys	Phe	Ala	Leu	Gly	His	Val	Thr	Glu	Gly	Ile	Ile	Gln	Gly
		835					840						845		
Pro	Thr	Ala	Ser	Gln	Asp	His	Ser	Ala	Phe	Ile	Pro	Ala	Pro	Val	Asp
		850				855					860				
Thr	Ala	Asn	Val	Asn	Leu	Pro	Gly	Tyr	Ile	Glu	Met	Leu	Arg	Asp	Lys
865					870					875					880
Leu	Ala	Glu	Asn	Ile	His	Glu	Leu	Trp	Cys	Met	Asn	Lys	Ile	Glu	Ala
				885					890					895	
Gly	Trp	Thr	Trp	Gly	Pro	Val	Arg	Asp	Asp	Ser	Lys	Lys	Val	His	Asp
			900						905					910	
Ser	Leu	Met	Phe	Phe	Ser	Ser	Leu	Ser	Glu	Gln	Glu	Lys	Asn	Phe	Asp
		915					920							925	
Ile	Thr	Met	Ala	Tyr	Glu	Thr	Leu	Arg	Thr	Leu	Met	Ala	Leu	Gly	Tyr

930	935	940
His Ile Ser Ile Asp Glu Glu Thr Ser Lys Ser Thr Leu Lys Arg Leu		
945	950	955 960
Arg Leu Pro Met Asn Tyr Leu Met Ser Asn Gly Tyr Lys Pro Ala Pro		
	965	970 975
Tyr Asn Leu Ser Thr Ile His Leu Asn Val Lys Met Glu Lys Leu Val		
	980	985 990
Glu Leu Leu Ala Glu Asn Ala His Asn Val Trp Ala Lys Asp Arg Ile		
	995	1000 1005
Ala Gln Gly Trp Thr Tyr Gly Leu Ser Glu Glu Thr Ser Tyr Lys		
1010	1015	1020
Arg Asn Pro Gln Leu Val Pro Tyr Asn Gln Leu Asn Asp Gln Ala		
1025	1030	1035
Lys Lys Leu Asn Arg Asp Thr Ala Ser Glu Thr Ile Arg Thr Ile		
1040	1045	1050
Leu Gly Phe Gly Tyr Ala Leu Glu Pro Pro Thr Asn Glu Gly Gln		
1055	1060	1065
Ser Asp Pro Ser Phe Arg Gly Leu Ala Arg Glu Ile Ser Asp Lys		
1070	1075	1080
Lys Ser His Thr Arg Thr Phe Arg Ala Glu Lys Ser Tyr Ala Val		
1085	1090	1095
Lys Ser Gly Arg Trp Tyr Phe Glu Phe Glu Ala Met Thr Thr Gly		
1100	1105	1110
Tyr Met Arg Val Gly Trp Gly Arg Pro Thr Ile Ala Ala Arg Ser		
1115	1120	1125
Glu Val Gly Thr Asp Gly Cys Ser Phe Ala Phe Asp Gly Phe Leu		
1130	1135	1140
Ala Arg Lys Trp His Gln Gly Ser Glu Thr Phe Gly Lys Thr Trp		
1145	1150	1155
Gly Glu Met Asp Val Ile Gly Cys Met Leu Asn Leu Val Asp Asn		
1160	1165	1170
Thr Ile Ser Phe Thr Met Asn Gly Glu Tyr Leu Cys Asp Ser Val		
1175	1180	1185
Gly Ser Glu Met Ala Phe His Asp Ile Glu Ile Gly Glu Gly Phe		
1190	1195	1200
Val Pro Val Cys Met Leu Ala Ala Gly Glu Lys Ala His Leu His		
1205	1210	1215
Phe Gly Gln Asp Val Asn Asp Leu Lys Tyr Phe Thr Val Cys Gly		
1220	1225	1230
Leu Gln Glu Gly Tyr Glu Pro Phe Cys Val Asn Met Lys Lys Ser		

1235						1240				1245				
Met	Pro	Leu	Trp	Tyr	Ser	Lys	Ser	Gln	Pro	Met	Phe	Gln	Ser	Ile
1250						1255				1260				
Glu	Asp	Glu	His	Asp	Arg	Leu	Gly	Ile	Thr	Arg	Ile	Pro	Ala	Gly
1265						1270				1275				
Ile	Glu	Gly	Pro	Pro	Cys	Leu	Lys	Val	Ser	His	Lys	Lys	Cys	Gly
1280						1285				1290				
Thr	Val	Glu	Asn	Leu	Pro	Thr	Glu	Tyr	Leu	Arg	Leu	Ser	Met	Pro
1295						1300				1305				
Val	Val	Cys	Lys	Asp	Phe	Pro	Thr	Ser	Gly	Glu	Met	Val	Leu	Ser
1310						1315				1320				
Ile	Pro	Val	Pro	Val	Leu	Ser	Pro	Gly	Asn	Lys	Arg	Gly	Gln	Trp
1325						1330				1335				
Ile	Gln	Gln	Gly	Ala	Thr	Ser	Leu	Asp	Leu	Ser	Glu	Thr	Asp	Ser
1340						1345				1350				
Asn	Asp	Gly	Thr	Asn	Arg	Arg	Thr	Arg	Ser	Gly	Leu	Asp	Lys	Met
1355						1360				1365				
Glu	His	Lys	Ala	Ile	Asp	Thr	Asp	Ala	Ile	Asp	Gly	Asp	Ala	Arg
1370						1375				1380				
Val	Asn	Gly	Tyr	Asn	Gly	Asp	Thr	Lys	Glu	Leu	Thr	Lys	Lys	Glu
1385						1390				1395				
Lys	Lys	Lys	Leu	Ala	Ser	Leu	Pro	Leu	Gly	Arg	Lys	Ile	Pro	Met
1400						1405				1410				
Ser	Arg	Ala	Ala	Ser	Ser	Glu	Thr	Ser	Thr	Val	Gln	Ser	Pro	Asp
1415						1420				1425				
Ser	Ser	Phe	Glu	Arg	Ser	Gly	Pro	Ser	Pro	Ala	Lys	Ser	Lys	Arg
1430						1435				1440				
Ser	Lys	Phe	Thr	Lys	Ser	Ser	Ser	Met	Asp	Ser	Gly	Ala	Lys	His
1445						1450				1455				
Pro	Glu	Asp	Thr	Leu	Ala	Lys	Pro	Thr	Gly	Tyr	Glu	Val	Asp	Gly
1460						1465				1470				
Gln	Arg	Ser	Pro	Gly	Ala	Ala	Arg	Arg	Gly	Lys	Lys	His	Asp	Arg
1475						1480				1485				
Leu	Arg	Thr	Pro	Glu	Ala	Ser	Pro	Pro	Gly	Thr	Leu	Thr	Arg	Glu
1490						1495				1500				
Tyr	Ile	Pro	Leu	Lys	Ser	Asp	Asn	Glu	Gly	Ser	Val	Gly	Ser	Asp
1505						1510				1515				
Asn	His	Gly	Arg	Pro	Arg	Leu	Ala	Lys	Leu	Val	Ser	Met	Gly	Ser
1520						1525				1530				
Ser	Phe	Asp	Val	Phe	Ser	Lys	Ser	Ile	Asp	Ile	Met	Ser	Asp	Ile

1535					1540					1545				
Ser	Glu	Ala	Asp	Ser	Ile	Asp	Leu	Ser	Met	Met	Thr	Lys	Phe	Tyr
1550						1555					1560			
Tyr	Ser	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	Asp	Ile	His
1565						1570					1575			
Val	Gly	Trp	Val	Thr	Pro	Gly	Tyr	His	His	Tyr	Ser	Pro	His	Phe
1580						1585					1590			
Asp	Pro	Ser	Lys	Thr	Ser	Glu	Val	Thr	Val	Asn	Met	Leu	Gly	Glu
1595						1600					1605			
Asn	Gly	Gly	Val	Gln	Glu	Ser	Ser	Lys	Arg	Arg	Asp	Cys	Phe	Thr
1610						1615					1620			
Val	Cys	Val	Gly	Asp	His	Met	Asp	Leu	Leu	Ile	Thr	Pro	Glu	Gly
1625						1630					1635			
Arg	Arg	Ile	Ser	Ser	Gly	Leu	Val	Val	Gly	Cys	Val	Val	Asp	Ala
1640						1645					1650			
Cys	Asn	Gly	Glu	Leu	Tyr	Phe	Thr	Ile	Asn	Gly	Arg	Asp	Ile	Ser
1655						1660					1665			
Thr	Lys	Tyr	Gln	Val	Glu	Pro	Lys	Thr	Lys	Leu	Phe	Pro	Ala	Val
1670						1675					1680			
Phe	Val	Lys	Pro	Thr	Ser	Lys	Glu	Met	Leu	Gln	Phe	Glu	Leu	Gly
1685						1690					1695			
Arg	Ser	Lys	Ile	Leu	Glu	Arg	Arg	Ser	Ser	Ser	Val	Gln	Ser	Glu
1700						1705					1710			
Ile	Ala	Gln	Met	Ser	Val	Asn	Gln	Asn	Cys	Leu	Pro	Leu	Ser	Ala
1715						1720					1725			
Ala	Trp	Phe	Arg	Gly	Asp	Thr	His	Asn	Pro	Thr	Pro	Gln	Cys	Pro
1730						1735					1740			
Ser	Arg	Val	Glu	Val	Gln	Val	Met	Tyr	Thr	Asn	Thr	Trp	Ala	Arg
1745						1750					1755			
Ala	Pro	Leu	Gln	Thr	Met	Asn	Ile	Glu	Thr	Lys	Lys	Met	Ser	Asp
1760						1765					1770			
Asn	Asn	Gly	Trp	Leu	Val	Ser	Cys	Pro	Glu	Pro	Val	Ser	Trp	Leu
1775						1780					1785			
Gly	Val	His	Ile	Pro	Glu	Glu	Asn	Arg	Cys	Met	Asp	Ile	Leu	Glu
1790						1795					1800			
Leu	Val	Glu	His	Glu	Asp	Leu	Leu	Lys	Phe	His	Ala	His	Thr	Leu
1805						1810					1815			
Arg	Leu	Tyr	Cys	Ser	Val	Cys	Ser	His	Gly	Asn	His	His	Val	Ala
1820						1825					1830			
His	Ala	Leu	Ile	Asn	His	Val	Asn	Glu	Asp	Gln	Leu	Met	Tyr	Cys



1835					1840					1845				
Leu	Gln	Cys	Pro	Tyr	Ile	Ser	Gly	Pro	Leu	Arg	Ile	Gly	Tyr	Tyr
1850						1855					1860			
Asn	Leu	Leu	His	Ala	Leu	His	Leu	Gln	Thr	His	Val	Ser	Ala	Arg
1865						1870					1875			
Leu	Lys	Thr	Gln	Asp	Glu	Phe	Ile	Ile	Pro	Leu	Met	Ala	Gly	Pro
1880						1885					1890			
Lys	Pro	Val	Asp	Glu	Glu	Leu	Asp	Ile	Ser	Ser	Ser	Met	Ser	Ile
1895						1900					1905			
Lys	Arg	Ala	Leu	Ser	Thr	Thr	Lys	Ser	Val	Ser	Ile	Arg	Pro	Gln
1910						1915					1920			
Leu	Asn	Ile	Gly	Pro	Ser	Ala	Asp	Ser	Ser	His	Gln	Ser	Phe	Ser
1925						1930					1935			
Gln	Ser	Met	Lys	Ala	Ser	Glu	Gln	Ala	Pro	Pro	Gly	Phe	Asn	His
1940						1945					1950			
Met	Val	Leu	Lys	Gln	His	Val	Ile	Ser	Ser	Leu	Gly	Glu	Ala	Val
1955						1960					1965			
Ala	His	Gly	Val	Ser	His	Cys	Arg	Asp	Pro	Ile	Gly	Gly	Asn	Tyr
1970						1975					1980			
Asn	Asn	Leu	Phe	Val	Pro	Leu	Leu	Glu	Leu	Cys	Asp	Ala	Leu	Leu
1985						1990					1995			
Val	Ile	Gly	Glu	Phe	Asp	Asp	Asp	Asp	Leu	Lys	Ser	Leu	Leu	Ile
2000						2005					2010			
Leu	Ile	Asp	Pro	Ala	Thr	Phe	Asp	Glu	Thr	Tyr	Lys	Lys	Gly	Val
2015						2020					2025			
Ser	Glu	Thr	Val	Gly	Met	Leu	Gln	Met	His	Leu	Asp	Glu	Pro	Val
2030						2035					2040			
Lys	Leu	Ala	Met	Cys	Phe	Leu	Leu	Gln	His	Leu	Cys	Asp	Ser	Gln
2045						2050					2055			
Leu	Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Asn	Phe	Ser	Asp	Asp	Phe
2060						2065					2070			
Val	Glu	Glu	Cys	Gln	Ala	Asp	Gln	Leu	Arg	Arg	Phe	Leu	Glu	Val
2075						2080					2085			
Arg	Asn	Thr	Asp	Met	Pro	Pro	Val	Ile	Ala	Ala	Lys	Lys	Thr	Arg
2090						2095					2100			
Glu	Phe	Arg	Ser	Thr	Pro	Gln	Glu	Gln	Met	Arg	Met	Leu	Leu	His
2105						2110					2115			
Phe	Lys	Asp	Gly	Asp	Asp	Gly	Met	Cys	Pro	Cys	Arg	Glu	Asp	Leu
2120						2125					2130			
Arg	Ser	Val	Leu	Leu	Glu	Phe	His	Ser	Thr	Leu	Ala	Lys	His	Cys

2135					2140					2145				
Gly Val	His Glu Thr Gln	Glu	Glu Lys Ser Thr	Asp	Ser Arg Gly									
2150		2155		2160										
Val Ile	Arg Arg Phe Leu	Ser	Trp Leu Ser Gly	Ser	Arg Lys Asp									
2165		2170		2175										
Ala Ser	Pro Ala Gly Ala	Ile	Leu Gln Glu Lys	Phe	Ser Ser Asp									
2180		2185		2190										
Ser Leu	Ser His Leu Ile	Ser	Asn Thr Met Ile	Lys	Trp Ala Glu									
2195		2200		2205										
Glu Lys	His Ile Glu Asp	Pro	Thr Leu Val Arg	Glu	Met Phe Asn									
2210		2215		2220										
Leu Leu	His Arg Gln Tyr	Asp	Gly Val Gly Glu	Leu	Cys Ser Ala									
2225		2230		2235										
Leu Gln	Lys Ser Tyr Val	Val	Ser Ser Asn Gln	Arg	Asp Asp Ile									
2240		2245		2250										
Val His	Leu Leu Thr Ser	Leu	Gly Gln Ile Arg	Ser	Leu Leu Thr									
2255		2260		2265										
Val Gln	Met Gly Ser Val	Glu	Glu Glu Ala Leu	Ile	Lys His Leu									
2270		2275		2280										
Trp Glu	Val Thr Asp Asn	Lys	Val Phe Tyr Gln	His	Pro Asp Leu									
2285		2290		2295										
Met Arg	Ala Leu Cys Val	His	Glu Thr Val Met	Asn	Val Met Val									
2300		2305		2310										
Asn Val	Leu Glu Lys His	Gln	Thr Ser Ile Gln	Leu	Thr Ser Asp									
2315		2320		2325										
Glu Glu	Ala Glu Ser Ser	Ala	Gln Gly Gln Gly	Val	Thr Gly Ala									
2330		2335		2340										
Ser Thr	Ala Ala Ala Pro	Pro	Lys Thr Gln Val	Cys	Val Tyr Arg									
2345		2350		2355										
Phe Leu	Ala Arg Arg Ala	Arg	Met Cys His Ser	Lys	Asp Arg Phe									
2360		2365		2370										
Ala Arg	Ala Leu Ile Ala	Gly	Cys Cys Arg Phe	Leu	Cys Tyr Phe									
2375		2380		2385										
Cys Arg	Thr Ser Arg Gln	Asn	Gln Arg Ala Leu	Phe	Asp Thr Leu									
2390		2395		2400										
Leu Tyr	Leu Leu Asp His	Gly	Phe Ile Gly Leu	Ser	Tyr Pro Ser									
2405		2410		2415										
Leu Arg	Gly Ser Cys Pro	Leu	Asp Val Ala Ala	Ala	Ser Leu Met									
2420		2425		2430										
Asp Asn	Asn Glu Leu Ala	Leu	Ala Leu Arg Glu	Gln	His Leu Glu									

2435		2440		2445
Lys Val Ile Thr Phe Leu Ser Arg Cys Gly Val Gln Asp Asn Ala				
2450		2455		2460
Arg Leu Arg Ala Met Gly Asn Pro Tyr Leu Asp Gly Thr Pro Leu				
2465		2470		2475
Asp Gly Glu Arg Tyr Leu Asp Phe Met Arg His Ala Val Trp Val				
2480		2485		2490
Asn Gly Glu Thr Val Glu Glu Asn Ala Asn Leu Ile Val Arg Met				
2495		2500		2505
Leu Ile Arg His Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu				
2510		2515		2520
Gly Lys Gly Leu Leu Ala Ala Met Glu Glu Ala Ile Asp Leu Ser				
2525		2530		2535
Glu Thr Ala Glu Glu Gly Tyr Leu Ile Ser Ala Pro Thr Met Ala				
2540		2545		2550
Ile Ser Glu Glu Asp Gly Glu Val Arg Pro Ile Asp Ala Ser Gly				
2555		2560		2565
Gln Asp Glu Glu Gly Asp Glu Asp Glu Asp Asp Val Asp Thr Gly				
2570		2575		2580
Gly Ala Ile Leu Thr Phe Tyr Ala Thr Leu Ile Asp Leu Leu Gly				
2585		2590		2595
Arg Cys Ala Pro Asp Glu Asn Arg Leu Ser Gln Gly Arg Thr Glu				
2600		2605		2610
Pro Gln Arg Ile Arg Ala Ile Leu Gln Ser Leu Val Pro Leu Asp				
2615		2620		2625
Asp Leu Val Gly Val Leu Asn Leu Lys Phe Ile Leu Pro Ser Pro				
2630		2635		2640
Gln Lys Ile Tyr Glu Lys Lys Asp Asp Gly Ala Gly Lys Pro Leu				
2645		2650		2655
Gly Ala Asp Leu Lys Gly Leu Thr Pro Val His Lys Glu Ala Met				
2660		2665		2670
Leu Leu Phe Leu Glu Arg Val Tyr Gly Val Gly Asn Gln Glu Leu				
2675		2680		2685
Phe Phe Glu Leu Leu Glu Val Gly Phe Leu Pro Asp Leu Arg Ala				
2690		2695		2700
Ala Thr Thr Met Asp Thr Pro Thr Thr His Asp His Asp Met Ala				
2705		2710		2715
Leu Ala Leu Asn Arg Tyr Ile Cys Asn Ser Val Leu Pro Leu Leu				
2720		2725		2730
Thr Arg His Ser Glu Met Phe Glu Ser Ala Asp Gln Phe Ala Ser				

2735		2740		2745
Leu Leu Asp Ser Thr Leu His Thr Val Tyr Arg Leu Ala Ser Cys				
2750		2755		2760
Arg Ser Leu Thr Arg Gly Gln Arg Asp Thr Val Ala Asp Phe Leu				
2765		2770		2775
Val Ala Leu Thr Arg Ser Leu Lys Pro Ser Met Met Gln Arg Leu				
2780		2785		2790
Leu Arg Lys Leu Ile Asn Asp Val Pro Val Leu Ala Glu Tyr Ser				
2795		2800		2805
Tyr Val Ala Leu Lys Ile Leu Gln Leu His Tyr Glu Arg Cys Val				
2810		2815		2820
Ser Tyr Tyr Gly Ser Asn Gly Gly Trp Gly Ser Tyr Gly Ala Ala				
2825		2830		2835
Asn Asp Glu Glu Lys Arg Leu Thr Met Met Leu Phe Thr Gly Leu				
2840		2845		2850
Phe Asp Ala Leu Ala Glu Lys Glu Tyr Asp Glu Glu Leu Phe Asp				
2855		2860		2865
Arg Ala Leu Pro Cys Leu Thr Ala Ile Gly Ser Ala Leu Pro Pro				
2870		2875		2880
Asp Tyr Ser Met Ser Tyr Asn Asp Glu Ser Tyr Val Arg Glu Ser				
2885		2890		2895
Cys Phe Asp Ala Asp Gly Ile Tyr Gln Pro Lys Pro Val Asp Ser				
2900		2905		2910
Asn Lys Val Leu Leu Asn Glu Ser Leu Leu Ser Phe Ser Asp Arg				
2915		2920		2925
Phe Ala Glu His Leu His Asp Ser Trp Ala Leu Ala Met Phe Asp				
2930		2935		2940
Asn Gly Trp Thr His Gly Glu Ala Glu Asn Ser Ala Met Lys Glu				
2945		2950		2955
Ser Cys Met Leu Arg Pro Tyr Lys Thr Leu Thr Thr Lys Glu Lys				
2960		2965		2970
Asp Ser Tyr Arg Glu Pro Val Arg Glu Cys Ile Lys Ala Leu Leu				
2975		2980		2985
Ala Trp Gly Trp Ser Val Glu Arg Ser Lys Ala Ser Glu Gln Gln				
2990		2995		3000
Ser Gln Ala His Arg Pro Arg Arg Leu Ser Lys Ala Ser Leu Gly				
3005		3010		3015
Ala Met Glu Ser Pro His Gly Tyr Asn Pro Arg Pro Ile Asp Val				
3020		3025		3030
Ser Asn Ile Thr Leu Thr Arg Glu Met Gln Thr Met Ala Glu Arg				

3035	3040	3045
Leu Ala Glu Asn Ala His Asp 3050	Val Trp Ala Lys Lys 3055	Thr Lys Leu 3060
Glu Met Glu Leu Arg Gly Ser 3065	Gly Cys His Ala Gln 3070	Leu Val Pro 3075
Phe Asp Ile Leu Thr Asp Ser 3080	Glu Lys Lys Lys Asp 3085	Arg Asp Met 3090
Ala Gln Ala Leu Leu Lys Phe 3095	Leu Gln Val Asn Gly 3100	Tyr Arg Leu 3105
Gln Arg His Ser Leu Ser Met 3110	Asp Ala Asp Gly Ile 3115	Ile Arg Gly 3120
His Ser Thr Ile Glu Lys Arg 3125	Phe Ala Phe Asn Leu 3130	Leu Asp Lys 3135
Leu Leu His Tyr Val Asp Lys 3140	Ser Gln Ala Asn Leu 3145	Lys Pro Gln 3150
Arg Arg Gln Gln Asp Ser Phe 3155	Arg Ser Ser Lys Lys 3160	Glu Ser Ser 3165
Gly Asp Arg Gly Tyr Lys Phe 3170	Phe Ala Lys Val Val 3175	Leu Pro Leu 3180
Ile Glu Lys Tyr Phe Gln Ala 3185	His Ser Ser Tyr Phe 3190	Val Ala Asp 3195
Pro Asn Ala Pro Gln Asn Gly 3200	Arg Ser Gly Gly Ala 3205	Ser Thr Arg 3210
Glu Lys Glu Leu Val Ser Ser 3215	Leu Phe Cys Lys Leu 3220	Ala Gln Leu 3225
Ile Arg Gln Lys Ile Asn Leu 3230	Phe Gly Arg Asp Leu 3235	Val Pro Phe 3240
Ile Arg Cys Ile Arg Val Val 3245	Ala Gln Ser Ile Asp 3250	Ala Ser Ser 3255
Val Val Lys His Ser Ala Asp 3260	Ala Ile Lys Asn Gly 3265	Leu Leu Val 3270
Phe Phe Arg His Ala Ser Asp 3275	Asp Leu Val Ala Thr 3280	Val Asp Ser 3285
Val Thr Ser Gly Gly Arg Phe 3290	Thr His Ile Lys Ser 3295	Asn Gln Val 3300
His Lys His Ser Leu Ala Val 3305	Asn Tyr Val Pro Gly 3310	Val Leu Val 3315
Pro Val Leu Ile Ser Leu Phe 3320	Gln His Leu Ala Arg 3325	His Asn Tyr 3330
Gly Ala Asp Leu Leu Leu Asp	Gln Ile Gln Val Tyr	Cys Tyr Arg

3335				3340				3345						
Ile	Leu	Ser	Cys	Leu	Tyr	Lys	Val	Gly	Ala	Asp	Gln	Ser	Ile	Tyr
3350						3355					3360			
Val	Lys	Lys	Leu	Arg	Pro	Ala	Val	Gly	Glu	Leu	Leu	Ala	Ala	Phe
3365						3370					3375			
Ser	Gly	Ala	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys
3380						3385					3390			
Asn	Asn	Pro	Asn	Ser	Leu	Leu	Gly	Gln	Ile	Glu	Leu	Arg	Gly	Ala
3395						3400					3405			
Thr	Val	Glu	Gly	Lys	Glu	Glu	Leu	Ile	Lys	Leu	Ala	Ala	Gly	Ile
3410						3415					3420			
Pro	Thr	Leu	Pro	Ala	Val	Val	Thr	Glu	Ile	Asp	Lys	Met	Ala	Met
3425						3430					3435			
Ser	Gly	Ala	Lys	Tyr	Asp	Gln	Ala	Pro	His	Ile	Ile	Glu	Val	Ile
3440						3445					3450			
Leu	Pro	Met	Leu	Cys	Ser	Tyr	Leu	Asn	Tyr	Trp	Trp	Gln	Gln	Gly
3455						3460					3465			
Pro	Asp	Asn	Ile	Cys	Arg	Arg	Gln	Gly	Asn	Tyr	Trp	Thr	Met	Val
3470						3475					3480			
Asn	Ser	Gly	Asn	Leu	Asn	Asn	Thr	Leu	Gly	Asn	Val	Leu	Thr	Leu
3485						3490					3495			
Val	Lys	Asn	Asn	Leu	Gly	Ser	Glu	Asn	Ala	Pro	Trp	Met	Ser	Arg
3500						3505					3510			
Ile	Ala	Ala	Thr	Ala	Lys	Pro	Ile	Leu	Asn	Asp	Ala	Gln	Pro	Glu
3515						3520					3525			
Leu	Leu	Lys	Thr	His	Phe	Val	Pro	Val	Ile	Glu	Lys	Leu	Glu	Glu
3530						3535					3540			
Arg	Thr	Ser	Lys	Val	Phe	Lys	Ala	Glu	Glu	Asp	Leu	Lys	Lys	Glu
3545						3550					3555			
Tyr	Pro	Met	Gly	Gly	Gln	Glu	Met	Glu	Glu	Thr	Glu	Phe	Ala	Ile
3560						3565					3570			
Leu	Glu	Asp	Tyr	His	Leu	Ile	Ile	Arg	Asp	Leu	Tyr	Ala	Ser	Tyr
3575						3580					3585			
Pro	Leu	Leu	Ile	Lys	Phe	Val	Asp	Ser	Gln	Arg	Ser	Gln	Trp	Leu
3590						3595					3600			
Lys	Ser	Pro	Ser	Ile	Asp	Ala	Glu	Lys	Leu	Tyr	Tyr	Lys	Val	Ala
3605						3610					3615			
Ser	Ile	Phe	Asn	Ser	Trp	Ala	Arg	Ser	Ala	Asn	Phe	Arg	Arg	Glu
3620						3625					3630			
Glu	Gln	Asn	Tyr	Val	Ala	Gln	Thr	Glu	Val	Asp	Ser	Ser	Ala	Ala

3635		3640		3645
Leu Thr Ser Ala Met Ser	Lys Ser Gly Gly Gly	Asn Gly Asn Phe		
3650	3655	3660		
Ser Tyr Gly Gly Ser Leu	Pro Gly Glu Pro Pro	Lys Leu Gln Ser		
3665	3670	3675		
Thr Ala Pro Lys Arg Pro	Asp Gly Gln His Gly	Ser Pro Pro Ser		
3680	3685	3690		
Leu Ile Leu Ala Ala Leu	Lys Arg Leu Leu Pro	Ile Gly Met Asn		
3695	3700	3705		
Gln Tyr Gly Ala Arg Glu	Gln Glu Leu Val Gln	Gln Ala Lys Leu		
3710	3715	3720		
Met Phe Gly Gln Lys Glu	Thr Asp Lys Glu Val	Arg Asp Tyr Leu		
3725	3730	3735		
Leu Gln Gln Leu His Leu	His Glu Lys Glu Lys	Val Glu Glu Thr		
3740	3745	3750		
Ala Arg Leu Thr Ala Leu	Gly His Ala Gln Ser	Ser Ile Ser Pro		
3755	3760	3765		
Lys Pro Ser Val Ser Phe	Ser Ser Ser Pro Pro	Ser Ser Ser Ser		
3770	3775	3780		
Pro Ala Ser Ala Pro Ala	Leu Ala Thr Ser Ser	Ser Ser Ala Thr		
3785	3790	3795		
Ser Thr Thr Ser Thr Ser	Ser Ser Ser Ser Ser	Ser Ser Ser Ser		
3800	3805	3810		
Ser Ser Pro Ser Ser Pro	Pro Ser Ser Ser Val	Asp Pro Gln Asp		
3815	3820	3825		
Ser Thr Lys Pro Ser Arg	Ile Arg Thr Arg Arg	Gln Ser Ile Ala		
3830	3835	3840		
Ala Trp Gln Thr Ala Ala	Ser Arg Val Thr Gly	Ala His Ile Thr		
3845	3850	3855		
Gln Ser Asp Ser Lys Gly	Trp Gln Arg His Leu	Tyr Asn Asn Met		
3860	3865	3870		
Ala Ala Ser Lys Leu Val	Gln Val Val Glu Leu	Thr Lys Asp Lys		
3875	3880	3885		
Val Ile Glu Arg Ile Met	Asn Met Ala Gln Val	Leu Asn Arg Leu		
3890	3895	3900		
His Gln Met Glu His Pro	Ser Met Ser Lys Lys	Asn Ala Trp Arg		
3905	3910	3915		
Arg Leu Met Ser Ala Gln	Arg Lys Arg Ala Ile	Met Ala Cys Phe		
3920	3925	3930		
Arg Met Ile Pro Leu His	His Leu Pro Arg His	Arg Ala Ile Asn		

3935				3940				3945						
Phe	Phe	Leu	Lys	Ala	Tyr	Lys	Glu	Arg	Trp	Leu	Ser	Asn	Glu	Glu
3950						3955					3960			
Ser	Ala	Gln	His	Leu	Leu	Ile	Asp	Asp	Leu	Thr	Lys	Cys	Ser	Ser
3965						3970					3975			
Glu	Glu	Leu	Gln	Glu	Phe	Glu	Pro	Glu	Asn	Val	Lys	Asp	Pro	Leu
3980						3985					3990			
Tyr	Gln	Leu	Ile	Ser	Thr	Phe	Ser	Arg	Ala	Phe	Gly	Leu	Gln	Gln
3995						4000					4005			
Asp	Met	Leu	Glu	Glu	Asp	Pro	Leu	Tyr	Leu	Ser	Tyr	Ala	Ala	Ile
4010						4015					4020			
Met	Ser	Thr	Ser	Cys	Ser	Gly	Gly	Glu	Asp	Asp	Asp	Asp	Asp	Asp
4025						4030					4035			
Asp	Gly	Gly	Asp	Glu	Asn	Gly	Thr	Ser	Phe	Gln	Glu	Gln	Glu	Met
4040						4045					4050			
Glu	Lys	Gln	Lys	Leu	Leu	Ser	Glu	Gln	Ala	Arg	Leu	Ala	Glu	Arg
4055						4060					4065			
Gly	Cys	Ala	Glu	Met	Val	Leu	Leu	Leu	Ile	Ser	Ala	Ser	Lys	Gly
4070						4075					4080			
Glu	Pro	Ser	Asp	Met	Val	Phe	Cys	Ser	Leu	Lys	Leu	Gly	Ile	Ser
4085						4090					4095			
Leu	Leu	Arg	Gly	Gly	Asn	Glu	Met	Val	Gln	Arg	Lys	Met	Leu	Glu
4100						4105					4110			
His	Leu	Gln	Asp	Lys	Met	Asp	Val	Gly	Phe	Phe	Thr	Ser	Val	Ala
4115						4120					4125			
Glu	Leu	Met	Glu	Lys	Cys	Thr	Val	Leu	Asp	Leu	Glu	Ala	Phe	Glu
4130						4135					4140			
Arg	Tyr	Asn	Lys	Ala	Glu	Gly	Leu	Gly	Val	Thr	Ser	Gly	Glu	Asn
4145						4150					4155			
Ala	Gly	Cys	Asp	Gly	Leu	Arg	Ala	Gly	Glu	Lys	Ala	Met	His	Asp
4160						4165					4170			
Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Leu	Gln	Leu	Leu	Cys
4175						4180					4185			
Glu	Gly	His	Asn	Leu	Glu	Phe	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala
4190						4195					4200			
Gly	Asn	His	Thr	Thr	Val	Asn	Ile	Ile	Ile	Cys	Thr	Val	Asp	Tyr
4205						4210					4215			
Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Ser	Asp	Phe	Tyr	Trp	His	Tyr
4220						4225					4230			
Ser	Gly	Lys	Asp	Val	Val	Asp	Ala	Gln	Gly	Arg	Glu	Asn	Phe	Ser



4235	4240	4245
Arg Ala Phe Lys Val Val Lys	Gln Val Phe Ser Ser	Leu Thr Glu
4250	4255	4260
Tyr Ile Gln Gly Pro Cys Ser	Gly Asn Gln Leu Ala	Leu Ala His
4265	4270	4275
Ser Arg Leu Trp Asp Ala Val	Val Gly Phe Leu His	Ile Phe Ala
4280	4285	4290
Asn Leu Gln Lys Lys Leu Ser	Gln Asp Thr Ser Gln	Leu Glu Leu
4295	4300	4305
Leu Arg Asp Leu Leu Asn Leu	His Lys Glu Met Val	Val Met Leu
4310	4315	4320
Leu Ser Met Leu Glu Gly Asn	Val Met His Gly Thr	Thr Gly Lys
4325	4330	4335
Gln Met Val Asp Thr Leu Val	Glu Ser Ser Ser Asn	Leu Glu Met
4340	4345	4350
Ile Leu Lys Phe Phe Asp Met	Phe Leu Lys Leu Lys	Asp Leu Ser
4355	4360	4365
Ser Ser Asp Ala Phe Arg Glu	Phe Asp Ala Asn Gly	Asp Gly Trp
4370	4375	4380
Ile Ser His Lys Glu Phe Gln	Lys Ala Met Glu Ala	Gln Lys Met
4385	4390	4395
Tyr Thr Val Asp Glu Ile Asp	Tyr Leu Leu Lys Cys	Ala Asp Arg
4400	4405	4410
Asn Asn Asp Gly Arg Ile Asp	Phe Asn Glu Phe Thr	Glu Arg Phe
4415	4420	4425
His Gly Pro Ala Gln Asp Ile	Gly Phe Asn Leu Ala	Val Leu Leu
4430	4435	4440
Thr Asn Leu Asn Asp His Met	Pro Gly Glu Arg Arg	Leu Glu Arg
4445	4450	4455
Phe Leu Leu Gln Ala Glu Ser	Leu Leu Thr Tyr Phe	Glu Pro Tyr
4460	4465	4470
Leu Gly Arg Ile Glu Ile Met	Gly Ser Ser Arg Gly	Ile Glu Arg
4475	4480	4485
Val Tyr Phe Lys Ile Thr Glu	Ser His Lys Ala Gln	Trp Glu Lys
4490	4495	4500
Pro Gln Ile Lys Glu Ser Lys	Gln Gln Phe Leu His	Glu Val Val
4505	4510	4515
Asn Glu Gly Gly Glu Lys Glu	Lys Leu Glu Asp Phe	Val Asn Phe
4520	4525	4530
Cys Glu Asp Thr Ile Phe Glu	Met Gln His Ala Thr	Ser Ile Ser

4535					4540					4545				
Asp	Thr	Gly	Glu	Ser	Leu	Pro	Glu	Val	Phe	Met	Ser	Leu	Leu	Thr
4550						4555					4560			
Phe	Gly	Ala	Ser	Arg	Asp	Ser	Asn	Asn	Trp	Leu	Val	Trp	Leu	Val
4565						4570					4575			
Arg	Gly	Met	Arg	Pro	Ser	Asn	Ile	Cys	Arg	Leu	Met	Gly	Asp	Phe
4580						4585					4590			
Phe	Ser	Ser	Ser	Gln	Tyr	Asn	Ile	Lys	Gln	Ile	Arg	Ser	Leu	Ser
4595						4600					4605			
Leu	Phe	Arg	Leu	Phe	Phe	Gly	Val	Ile	Lys	Leu	Ile	Phe	Leu	Gly
4610						4615					4620			
Val	Phe	Lys	Leu	Phe	Lys	Phe	Ala	Phe	Val	Ile	Val	Gly	Lys	Leu
4625						4630					4635			
Ile	Gly	Leu	Leu	Val	Gly	Thr	Arg	Ile	Leu	Glu	Asp	Ala	Arg	Glu
4640						4645					4650			
Ile	Thr	Gly	Ser	Ile	Lys	His	Ser	Leu	His	Val	Pro	Arg	Val	Ala
4655						4660					4665			
Arg	Arg	Gln	Thr	Ser	Ser	Ile	Ile	Asn	Val	Pro	Gly	Tyr	Gly	Met
4670						4675					4680			
Pro	Ser	Ala	Arg	Arg	Asn	Thr	Ser	Phe	Trp	Gln	Tyr	Leu	Thr	Ser
4685						4690					4695			
Gln	Tyr	Phe	Thr	Asn	Val	Asn	Ser	Met	Asp	Thr	Val	Ser	Ala	Phe
4700						4705					4710			
Gly	Ile	Asp	Phe	Leu	Lys	Gly	Lys	Gly	Gly	Gly	Gly	Gly	Gly	Gly
4715						4720					4725			
Ala	Gly	Gly	Thr	Asp	Gln	Tyr	Lys	Leu	Arg	Met	Arg	Arg	Lys	Arg
4730						4735					4740			
Arg	Pro	Leu	Thr	Pro	Ser	Ser	Ser	Phe	Asp	Phe	Asp	Glu	Glu	Met
4745						4750					4755			
Ser	Met	Asp	Asn	Met	Pro	Thr	His	Thr	Pro	Ser	Glu	Ala	Ser	Asp
4760						4765					4770			
Ser	Ser	Phe	Asp	Ser	Gly	Ala	Met	Ala	Lys	Asn	Asp	Phe	Ser	Met
4775						4780					4785			
Pro	Asp	Met	Ser	Ala	Gly	Arg	Arg	Asp	Ser	Thr	Val	Phe	Pro	Ser
4790						4795					4800			
Leu	Phe	Leu	Ala	Thr	Glu	Met	Pro	Ser	Thr	Gln	Val	Lys	Glu	Glu
4805						4810					4815			
Glu	Glu	Glu	Glu	Glu	Pro	Val	Tyr	Glu	Pro	Gln	Met	Asn	Arg	Val
4820						4825					4830			
Lys	Gln	Thr	Val	Val	Ser	Leu	Phe	Ala	Arg	Asn	Phe	Tyr	Asn	Ile

4835		4840		4845
Lys Tyr Val Ala Leu Ala	Leu Val Phe Cys Ile	Asn Ile Leu Leu		
4850	4855	4860		
Leu Phe Phe Lys Val Ser	Tyr Leu Thr Ala Glu	Leu Glu Glu Val		
4865	4870	4875		
Asp Pro Tyr His Pro Val	Glu Ile Leu Glu Asn	Ala Thr Ser Pro		
4880	4885	4890		
Asn Gly Ala Asp Met Ala	Gly Asp Glu Asp Arg	Val Asp Asp Gln		
4895	4900	4905		
Ile Glu Gln Ile Leu Ile	Asn Gln Gln Phe Met	Tyr Leu Val Pro		
4910	4915	4920		
Val Leu Gln Val Leu Ser	Ile Leu His Ser Leu	Val Ser Ile Ser		
4925	4930	4935		
Met Leu Ile Ala Tyr Cys	Ala Leu Lys Val Pro	Leu Cys Leu Phe		
4940	4945	4950		
Lys Arg Glu Lys Glu Ile	Ala Arg Lys Leu Glu	Phe Asp Gly Gln		
4955	4960	4965		
Trp Ile Thr Glu Gln Pro	Thr Arg Asp Asp Ile	Lys Gly Gln Trp		
4970	4975	4980		
Asp Ser Leu Ala Ile Ser	Thr Val Ser Phe Pro	Val Tyr Tyr Trp		
4985	4990	4995		
Asp Lys Phe Val Lys Lys	Lys Val Leu Lys Lys	Tyr Glu Asp Ala		
5000	5005	5010		
Val Gly Glu Asp Lys Leu	Cys Ala Met Leu Gly	Met Glu Ile Gly		
5015	5020	5025		
Glu Asn Pro Met Ala Gly	Asn Pro Thr Glu Asn	Pro Asn Gln Gly		
5030	5035	5040		
Leu Phe Ser Ser Met Leu	Thr Ser Leu Asp Trp	Lys Tyr His Ile		
5045	5050	5055		
Trp Lys Cys Gly Val Ile	Gly Thr Asp Asn Ser	Phe Leu Tyr Ile		
5060	5065	5070		
Ala Trp Tyr Leu Leu Phe	Ser Leu Leu Gly His	Ile Asn Pro Phe		
5075	5080	5085		
Phe Phe Ala Ala His Leu	Leu Asp Ile Ala Met	Gly Phe Lys Thr		
5090	5095	5100		
Leu Arg Thr Val Leu Gln	Ser Val Thr His Asn	Gly Lys Gln Leu		
5105	5110	5115		
Val Leu Thr Leu Met Met	Thr Cys Val Ile Ile	Tyr Leu Tyr Thr		
5120	5125	5130		
Val Leu Ala Phe Asn Phe	Phe Arg Lys Phe Tyr	Thr Lys Asp Asp		

5135		5140		5145
Glu Gly	Glu Ile Glu Tyr	Lys Cys His Asn Met	Met	Ser Cys Phe
5150		5155	5160	
Val Phe	His Leu His Ser	Gly Leu Arg Ala Gly	Gly Gly	Gly Ile Ala
5165		5170	5175	
Asp Glu	Ile Glu Ala Pro	Asp Gly Asp Val Tyr	Glu Tyr Tyr Arg	
5180		5185	5190	
Ile Ile	Phe Asp Ile Thr	Phe Phe Phe Val	Ile Val Ile Leu	
5195		5200	5205	
Leu Ala	Ile Ile Gln Gly	Leu Ile Ile Asp Ala	Phe Gly Glu Leu	
5210		5215	5220	
Arg Asp	Gln Leu Glu Gln	Val Arg Glu Asp Met	Glu Thr Lys Cys	
5225		5230	5235	
Phe Ile	Cys Ser Ile Gly	Arg Glu Tyr Phe Asp	Lys Leu Pro His	
5240		5245	5250	
Gly Phe	Glu Leu His Thr	Ser Lys Glu His Asp	Leu Ser Asn Tyr	
5255		5260	5265	
Met Phe	Phe Leu Met Tyr	Leu Ile Asn Lys Pro	Glu Thr Glu His	
5270		5275	5280	
Thr Gly	Gln Glu Ser Tyr	Val Trp Gln Leu Tyr	Gln Gln Arg Cys	
5285		5290	5295	
Trp Asp	Phe Phe Pro Val	Gly Asp Cys Phe Arg	Lys Gln Tyr Asp	
5300		5305	5310	
Asp Glu	Gln Ala			
5315				

<210> 60  
 <211> 4967  
 <212> PRT  
 <213> Mus musculus

<400> 60  
 Met Ala Asp Ala Gly Glu Gly Glu Asp Glu Ile Gln Phe Leu Arg Thr  
 1 5 10 15  
 Asp Asp Glu Val Val Leu Gln Cys Thr Ala Thr Ile His Lys Glu Gln  
 20 25 30  
 Gln Lys Leu Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg Leu Cys Phe  
 35 40 45  
 Leu Glu Ser Thr Ser Asn Ser Lys Asn Val Pro Pro Asp Leu Ser Ile  
 50 55 60  
 Cys Thr Phe Val Leu Glu Gln Ser Leu Ser Val Arg Ala Leu Gln Glu  
 65 70 75 80

Met	Leu	Ala	Asn	Thr	Val	Glu	Lys	Ser	Glu	Gly	Gln	Val	Asp	Val	Glu	
				85					90					95		
Lys	Trp	Lys	Phe	Met	Met	Lys	Thr	Ala	Gln	Gly	Gly	Gly	His	Arg	Thr	
			100					105					110			
Leu	Leu	Tyr	Gly	His	Ala	Ile	Leu	Leu	Arg	His	Ser	Tyr	Ser	Gly	Met	
		115					120					125				
Tyr	Leu	Cys	Cys	Leu	Ser	Thr	Ser	Arg	Ser	Ser	Thr	Asp	Lys	Leu	Ala	
	130					135					140					
Phe	Asp	Val	Gly	Leu	Gln	Glu	Asp	Thr	Thr	Gly	Glu	Ala	Cys	Trp	Trp	
145					150					155					160	
Thr	Ile	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu	Gly	Glu	Lys	Val	Arg	
				165				170						175		
Val	Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ser	Ser	Glu	Arg	Tyr	Leu	
			180					185					190			
His	Leu	Ser	Tyr	Gly	Asn	Ser	Ser	Trp	His	Val	Asp	Ala	Ala	Phe	Gln	
		195					200					205				
Gln	Thr	Leu	Trp	Ser	Val	Ala	Pro	Ile	Ser	Ser	Gly	Ser	Glu	Ala	Ala	
	210					215					220					
Gln	Gly	Tyr	Leu	Ile	Gly	Gly	Asp	Val	Leu	Arg	Leu	Leu	His	Gly	His	
225					230					235					240	
Met	Asp	Glu	Cys	Leu	Thr	Val	Pro	Ser	Gly	Glu	His	Gly	Glu	Glu	Gln	
				245					250					255		
Arg	Arg	Thr	Val	His	Tyr	Glu	Gly	Gly	Ala	Val	Ser	Val	His	Ala	Arg	
			260					265					270			
Ser	Leu	Trp	Arg	Leu	Glu	Thr	Leu	Arg	Val	Ala	Trp	Ser	Gly	Ser	His	
		275					280					285				
Ile	Arg	Trp	Gly	Gln	Pro	Phe	Arg	Leu	Arg	His	Val	Thr	Thr	Gly	Lys	
	290					295					300					
Tyr	Leu	Ser	Leu	Met	Glu	Asp	Lys	Asn	Leu	Leu	Leu	Met	Asp	Lys	Glu	
305					310					315					320	
Lys	Ala	Asp	Val	Lys	Ser	Thr	Ala	Phe	Ala	Phe	Arg	Ser	Ser	Lys	Glu	
				325					330					335		
Lys	Leu	Asp	Val	Gly	Val	Arg	Lys	Glu	Val	Asp	Gly	Met	Gly	Thr	Ser	
			340					345					350			
Glu	Ile	Lys	Tyr	Gly	Asp	Ser	Ile	Cys	Tyr	Ile	Gln	His	Val	Asp	Thr	
	355						360					365				
Gly	Leu	Trp	Leu	Thr	Tyr	Gln	Ala	Val	Asp	Val	Lys	Ser	Ala	Arg	Met	
	370					375					380					
Gly	Ser	Ile	Gln	Arg	Lys	Ala	Ile	Met	His	His	Glu	Gly	His	Met	Asp	
385					390					395					400	

Asp	Gly	Leu	Asn	Leu	Ser	Arg	Ser	Gln	His	Glu	Glu	Ser	Arg	Thr	Ala		
				405					410						415		
Arg	Val	Ile	Arg	Ser	Thr	Val	Phe	Leu	Phe	Asn	Arg	Phe	Ile	Arg	Gly		
			420					425					430				
Leu	Asp	Ala	Leu	Ser	Lys	Lys	Val	Lys	Leu	Pro	Thr	Ile	Asp	Leu	Pro		
		435					440					445					
Ile	Glu	Ser	Val	Ser	Leu	Ser	Leu	Gln	Asp	Leu	Ile	Gly	Tyr	Phe	His		
	450					455					460						
Pro	Pro	Asp	Glu	His	Leu	Glu	His	Glu	Asp	Lys	Gln	Asn	Arg	Leu	Arg		
465					470					475					480		
Ala	Leu	Lys	Asn	Arg	Gln	Asn	Leu	Phe	Gln	Glu	Glu	Gly	Met	Ile	Asn		
				485					490					495			
Leu	Val	Leu	Glu	Cys	Ile	Asp	Arg	Leu	His	Val	Tyr	Ser	Ser	Ala	Ala		
			500					505					510				
His	Phe	Ala	Asp	Val	Ala	Gly	Arg	Glu	Ala	Gly	Glu	Ser	Trp	Lys	Ser		
	515						520					525					
Ile	Leu	Asn	Ser	Leu	Tyr	Glu	Leu	Leu	Ala	Ala	Leu	Ile	Arg	Gly	Asn		
	530					535					540						
Arg	Lys	Asn	Cys	Ala	Gln	Phe	Ser	Gly	Ser	Leu	Asp	Trp	Leu	Ile	Ser		
545					550					555					560		
Arg	Leu	Glu	Arg	Leu	Glu	Ala	Ser	Ser	Gly	Ile	Leu	Glu	Val	Leu	His		
				565					570					575			
Cys	Val	Leu	Val	Glu	Ser	Pro	Glu	Ala	Leu	Asn	Ile	Ile	Lys	Glu	Gly		
			580					585					590				
His	Ile	Lys	Ser	Ile	Ile	Ser	Leu	Leu	Asp	Lys	His	Gly	Arg	Asn	His		
	595						600					605					
Lys	Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Cys	His	Gly	Val	Ala		
	610					615					620						
Val	Arg	Ser	Asn	Gln	His	Leu	Ile	Cys	Asp	Asn	Leu	Leu	Pro	Gly	Arg		
625					630					635				640			
Asp	Leu	Leu	Leu	Gln	Thr	Arg	Leu	Val	Asn	His	Val	Ser	Ser	Met	Arg		
				645					650					655			
Pro	Asn	Ile	Phe	Leu	Gly	Val	Ser	Glu	Gly	Ser	Ala	Gln	Tyr	Lys	Lys		
			660					665					670				
Trp	Tyr	Tyr	Glu	Leu	Met	Val	Asp	His	Thr	Glu	Pro	Phe	Val	Thr	Ala		
	675						680					685					
Glu	Ala	Thr	His	Leu	Arg	Val	Gly	Trp	Ala	Ser	Thr	Glu	Gly	Tyr	Ser		
	690					695					700						
Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Glu	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp		
705					710					715					720		

Asp	Leu	Phe	Ser	Tyr	Gly	Phe	Asp	Gly	Leu	His	Leu	Trp	Ser	Gly	Cys		
				725					730					735			
Ile	Ala	Arg	Thr	Val	Ser	Ser	Pro	Asn	Gln	His	Leu	Leu	Arg	Thr	Asp		
			740					745					750				
Asp	Val	Ile	Ser	Cys	Cys	Leu	Asp	Leu	Ser	Ala	Pro	Ser	Ile	Ser	Phe		
		755					760					765					
Arg	Ile	Asn	Gly	Gln	Pro	Val	Gln	Gly	Met	Phe	Glu	Asn	Phe	Asn	Ile		
	770					775					780						
Asp	Gly	Leu	Phe	Phe	Pro	Val	Val	Ser	Phe	Ser	Ala	Gly	Ile	Lys	Val		
785					790				795					800			
Arg	Phe	Leu	Leu	Gly	Gly	Arg	His	Gly	Glu	Phe	Lys	Phe	Leu	Pro	Pro		
			805					810						815			
Pro	Gly	Tyr	Ala	Ala	Cys	Tyr	Glu	Ala	Val	Leu	Pro	Lys	Glu	Lys	Leu		
		820					825						830				
Lys	Val	Glu	His	Ser	Arg	Glu	Tyr	Lys	Gln	Glu	Arg	Thr	Tyr	Thr	Arg		
	835					840					845						
Asp	Leu	Leu	Gly	Pro	Thr	Val	Ser	Leu	Thr	Gln	Ala	Ala	Phe	Thr	Pro		
	850					855					860						
Val	Pro	Val	Asp	Thr	Ser	Gln	Ile	Val	Leu	Pro	Pro	His	Leu	Glu	Arg		
865					870					875					880		
Ile	Arg	Glu	Arg	Leu	Ala	Glu	Asn	Ile	His	Glu	Leu	Trp	Val	Met	Asn		
			885					890						895			
Lys	Ile	Glu	Leu	Gly	Trp	Gln	Tyr	Gly	Pro	Val	Arg	Asp	Asp	Asn	Lys		
	900							905					910				
Arg	Gln	His	Pro	Cys	Leu	Val	Glu	Phe	Cys	Lys	Leu	Pro	Glu	Gln	Glu		
	915						920					925					
Arg	Asn	Tyr	Asn	Leu	Gln	Met	Ser	Leu	Glu	Thr	Leu	Lys	Thr	Leu	Leu		
	930					935					940						
Ala	Leu	Gly	Cys	His	Val	Gly	Ile	Ala	Asp	Glu	His	Ala	Glu	Glu	Lys		
945					950				955						960		
Val	Lys	Lys	Met	Lys	Leu	Pro	Lys	Asn	Tyr	Gln	Leu	Thr	Ser	Gly	Tyr		
			965					970						975			
Lys	Pro	Ala	Pro	Met	Asp	Leu	Ser	Phe	Ile	Lys	Leu	Thr	Pro	Ser	Gln		
		980						985					990				
Glu	Ala	Met	Val	Asp	Lys	Leu	Ala	Glu	Asn	Ala	His	Asn	Val	Trp	Ala		
	995						1000						1005				
Arg	Asp	Arg	Ile	Arg	Gln	Gly	Trp	Thr	Tyr	Gly	Ile	Gln	Gln	Asp			
	1010					1015					1020						
Val	Lys	Asn	Arg	Arg	Asn	Pro	Arg	Leu	Val	Pro	Tyr	Thr	Leu	Leu			
	1025					1030					1035						

Asp	Asp	Arg	Thr	Lys	Lys	Ser	Asn	Lys	Asp	Ser	Leu	Arg	Glu	Ala
1040						1045					1050			
Val	Arg	Thr	Leu	Leu	Gly	Tyr	Gly	Tyr	His	Leu	Glu	Ala	Pro	Asp
1055						1060					1065			
Gln	Asp	His	Ala	Ser	Arg	Ala	Glu	Val	Cys	Ser	Gly	Thr	Gly	Glu
1070						1075					1080			
Arg	Phe	Arg	Ile	Phe	Arg	Ala	Glu	Lys	Thr	Tyr	Ala	Val	Lys	Ala
1085						1090					1095			
Gly	Arg	Trp	Tyr	Phe	Glu	Phe	Glu	Ala	Val	Thr	Ala	Gly	Asp	Met
1100						1105					1110			
Arg	Val	Gly	Trp	Ser	Arg	Pro	Gly	Cys	Gln	Pro	Asp	Leu	Glu	Leu
1115						1120					1125			
Gly	Ser	Asp	Asp	Arg	Ala	Phe	Ala	Phe	Asp	Gly	Phe	Lys	Ala	Gln
1130						1135					1140			
Arg	Trp	His	Gln	Gly	Asn	Glu	His	Tyr	Gly	Arg	Ser	Trp	Gln	Ala
1145						1150					1155			
Gly	Asp	Val	Val	Gly	Cys	Met	Val	Asp	Met	Asn	Glu	His	Thr	Met
1160						1165					1170			
Met	Phe	Thr	Leu	Asn	Gly	Glu	Ile	Leu	Leu	Asp	Asp	Ser	Gly	Ser
1175						1180					1185			
Glu	Leu	Ala	Phe	Lys	Asp	Phe	Asp	Val	Gly	Asp	Gly	Phe	Ile	Pro
1190						1195					1200			
Val	Cys	Ser	Leu	Gly	Val	Ala	Gln	Val	Gly	Arg	Met	Asn	Phe	Gly
1205						1210					1215			
Lys	Asp	Val	Ser	Thr	Leu	Lys	Tyr	Phe	Thr	Ile	Cys	Gly	Leu	Gln
1220						1225					1230			
Glu	Gly	Tyr	Glu	Pro	Phe	Ala	Val	Asn	Thr	Asn	Arg	Asp	Ile	Thr
1235						1240					1245			
Met	Trp	Leu	Ser	Lys	Arg	Leu	Pro	Gln	Phe	Leu	Gln	Val	Pro	Ser
1250						1255					1260			
Asn	His	Glu	His	Ile	Glu	Val	Thr	Arg	Ile	Asp	Gly	Thr	Ile	Asp
1265						1270					1275			
Ser	Ser	Pro	Cys	Leu	Lys	Val	Thr	Gln	Lys	Ser	Phe	Gly	Ser	Gln
1280						1285					1290			
Asn	Asn	Asn	Thr	Asp	Ile	Met	Phe	Tyr	Arg	Leu	Ser	Met	Pro	Ile
1295						1300					1305			
Glu	Cys	Ala	Glu	Val	Phe	Ser	Lys	Ser	Val	Ala	Gly	Gly	Leu	Pro
1310						1315					1320			
Gly	Ala	Gly	Phe	Tyr	Gly	Pro	Lys	Ser	Asp	Leu	Glu	Asp	Phe	Asp
1325						1330					1335			



Val	Asp	Ser	Asp	Phe	Glu	Val	Leu	Met	Lys	Thr	Ala	His	Gly	His
1340						1345					1350			
Leu	Val	Pro	Asp	Arg	Ile	Asp	Lys	Asp	Lys	Glu	Thr	Pro	Lys	Pro
1355						1360					1365			
Glu	Phe	Asn	Asn	His	Lys	Asp	Tyr	Ala	Gln	Glu	Lys	Pro	Ser	Arg
1370						1375					1380			
Leu	Lys	Gln	Arg	Phe	Leu	Leu	Arg	Arg	Thr	Lys	Pro	Asp	Tyr	Ser
1385						1390					1395			
Thr	Gly	His	Ser	Ala	Arg	Leu	Thr	Glu	Asp	Val	Leu	Ala	Gly	Asp
1400						1405					1410			
Arg	Asp	Asp	Tyr	Glu	Tyr	Leu	Met	Gln	Thr	Ser	Thr	Tyr	Tyr	Tyr
1415						1420					1425			
Ser	Val	Arg	Ile	Phe	Pro	Gly	Gln	Glu	Pro	Ala	Asn	Val	Trp	Val
1430						1435					1440			
Gly	Trp	Ile	Thr	Ser	Asp	Phe	His	Gln	Tyr	Asp	Thr	Gly	Phe	Asp
1445						1450					1455			
Leu	Asp	Arg	Val	Arg	Thr	Val	Thr	Val	Thr	Leu	Gly	Asp	Glu	Lys
1460						1465					1470			
Gly	Lys	Val	His	Glu	Ser	Ile	Lys	Arg	Ser	Asn	Cys	Tyr	Met	Val
1475						1480					1485			
Cys	Ala	Gly	Glu	Ser	Met	Ser	Pro	Gly	Gln	Gly	Arg	Asn	Asn	Ser
1490						1495					1500			
Asn	Gly	Leu	Glu	Ile	Gly	Cys	Val	Val	Asp	Ala	Ala	Ser	Gly	Leu
1505						1510					1515			
Leu	Thr	Phe	Ile	Ala	Asn	Gly	Lys	Glu	Leu	Ser	Thr	Tyr	Tyr	Gln
1520						1525					1530			
Val	Glu	Pro	Ser	Thr	Lys	Leu	Phe	Pro	Ala	Val	Phe	Ala	Gln	Ala
1535						1540					1545			
Thr	Ser	Pro	Asn	Val	Phe	Gln	Phe	Glu	Leu	Gly	Arg	Ile	Lys	Asn
1550						1555					1560			
Val	Met	Pro	Leu	Ser	Ala	Gly	Leu	Phe	Lys	Ser	Glu	His	Lys	Asn
1565						1570					1575			
Pro	Val	Pro	Gln	Cys	Pro	Pro	Arg	Leu	His	Val	Gln	Phe	Leu	Ser
1580						1585					1590			
His	Val	Leu	Trp	Ser	Arg	Met	Pro	Asn	Gln	Phe	Leu	Lys	Val	Asp
1595						1600					1605			
Val	Ser	Arg	Ile	Ser	Glu	Arg	Gln	Gly	Trp	Leu	Val	Gln	Cys	Leu
1610						1615					1620			
Asp	Pro	Leu	Gln	Phe	Met	Ser	Leu	His	Ile	Pro	Glu	Glu	Asn	Arg
1625						1630					1635			

Ser	Val	Asp	Ile	Leu	Glu	Leu	Thr	Glu	Gln	Glu	Glu	Leu	Leu	Gln
1640						1645					1650			
Phe	His	Tyr	His	Thr	Leu	Arg	Leu	Tyr	Ser	Ala	Val	Cys	Ala	Leu
1655						1660					1665			
Gly	Asn	His	Arg	Val	Ala	His	Ala	Leu	Cys	Ser	His	Val	Asp	Glu
1670						1675					1680			
Pro	Gln	Leu	Leu	Tyr	Ala	Ile	Glu	Asn	Lys	Tyr	Met	Pro	Gly	Leu
1685						1690					1695			
Leu	Arg	Ala	Gly	Tyr	Tyr	Asp	Leu	Leu	Ile	Asp	Ile	His	Leu	Ser
1700						1705					1710			
Ser	Tyr	Ala	Thr	Ala	Arg	Leu	Met	Met	Asn	Asn	Glu	Phe	Ile	Val
1715						1720					1725			
Pro	Met	Thr	Glu	Glu	Thr	Lys	Ser	Ile	Thr	Leu	Phe	Pro	Asp	Glu
1730						1735					1740			
Asn	Lys	Lys	His	Gly	Leu	Pro	Gly	Ile	Gly	Leu	Ser	Thr	Ser	Leu
1745						1750					1755			
Arg	Pro	Arg	Met	Arg	Phe	Ser	Ser	Pro	Ser	Phe	Val	Ser	Ile	Ser
1760						1765					1770			
Asn	Asp	Cys	Tyr	Gln	Tyr	Ser	Pro	Glu	Phe	Pro	Leu	Asp	Ile	Leu
1775						1780					1785			
Lys	Ala	Lys	Thr	Ile	Gln	Met	Leu	Thr	Glu	Ala	Val	Lys	Glu	Gly
1790						1795					1800			
Ser	Leu	His	Ala	Arg	Asp	Pro	Val	Gly	Gly	Thr	Thr	Glu	Phe	Leu
1805						1810					1815			
Phe	Val	Pro	Leu	Ile	Lys	Leu	Phe	Tyr	Thr	Leu	Leu	Ile	Met	Gly
1820						1825					1830			
Ile	Phe	His	Asn	Glu	Asp	Leu	Lys	His	Ile	Leu	Gln	Leu	Ile	Glu
1835						1840					1845			
Pro	Ser	Val	Phe	Lys	Glu	Ala	Ala	Val	Pro	Glu	Glu	Glu	Gly	Gly
1850						1855					1860			
Thr	Pro	Glu	Lys	Glu	Ile	Ser	Ile	Glu	Asp	Ala	Lys	Leu	Glu	Gly
1865						1870					1875			
Glu	Glu	Glu	Ala	Lys	Gly	Gly	Lys	Arg	Pro	Lys	Glu	Gly	Leu	Leu
1880						1885					1890			
Gln	Met	Lys	Leu	Pro	Glu	Pro	Val	Lys	Leu	Gln	Met	Cys	Leu	Leu
1895						1900					1905			
Leu	Gln	Tyr	Leu	Cys	Asp	Cys	Gln	Val	Arg	His	Arg	Ile	Glu	Ala
1910						1915					1920			
Ile	Val	Ala	Phe	Ser	Asp	Asp	Phe	Val	Ala	Lys	Leu	Gln	Asp	Asn
1925						1930					1935			

Gln	Arg	Phe	Arg	Tyr	Asn	Glu	Val	Met	Gln	Ala	Leu	Asn	Met	Ser
1940						1945					1950			
Ala	Ala	Leu	Thr	Ala	Arg	Lys	Thr	Lys	Glu	Phe	Arg	Ser	Pro	Pro
1955						1960					1965			
Gln	Glu	Gln	Ile	Asn	Met	Leu	Leu	Asn	Phe	Lys	Asp	Asp	Lys	Ser
1970						1975					1980			
Glu	Cys	Pro	Cys	Pro	Glu	Glu	Ile	Arg	Asp	Gln	Leu	Leu	Asp	Phe
1985						1990					1995			
His	Glu	Asp	Leu	Met	Thr	His	Cys	Gly	Ile	Glu	Leu	Asp	Glu	Asp
2000						2005					2010			
Gly	Ser	Leu	Asp	Gly	Ser	Asn	Asp	Leu	Thr	Ile	Arg	Gly	Arg	Leu
2015						2020					2025			
Leu	Ser	Leu	Val	Glu	Lys	Val	Thr	Tyr	Leu	Lys	Lys	Lys	Gln	Ala
2030						2035					2040			
Glu	Lys	Pro	Val	Ala	Ser	Asp	Ser	Arg	Lys	Cys	Ser	Ser	Leu	Gln
2045						2050					2055			
Gln	Leu	Ile	Ser	Glu	Thr	Met	Val	Arg	Trp	Ala	Gln	Glu	Ser	Val
2060						2065					2070			
Ile	Glu	Asp	Pro	Glu	Leu	Val	Arg	Ala	Met	Phe	Val	Leu	Leu	His
2075						2080					2085			
Arg	Gln	Tyr	Asp	Gly	Ile	Gly	Gly	Leu	Val	Arg	Ala	Leu	Pro	Lys
2090						2095					2100			
Thr	Tyr	Thr	Ile	Asn	Gly	Val	Ser	Val	Glu	Asp	Thr	Ile	Asn	Leu
2105						2110					2115			
Leu	Ala	Ser	Leu	Gly	Gln	Ile	Arg	Ser	Leu	Leu	Ser	Val	Arg	Met
2120						2125					2130			
Gly	Lys	Glu	Glu	Glu	Lys	Leu	Met	Ile	Arg	Gly	Leu	Gly	Asp	Ile
2135						2140					2145			
Met	Asn	Asn	Lys	Val	Phe	Tyr	Gln	His	Pro	Asn	Leu	Met	Arg	Ala
2150						2155					2160			
Leu	Gly	Met	His	Glu	Thr	Val	Met	Glu	Val	Met	Val	Asn	Val	Leu
2165						2170					2175			
Gly	Gly	Gly	Glu	Ser	Lys	Glu	Ile	Thr	Phe	Pro	Lys	Met	Val	Ala
2180						2185					2190			
Asn	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Ile	Ser	Arg	Gln
2195						2200					2205			
Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Leu	Ser	Tyr	Leu	Leu	Glu	Asn
2210						2215					2220			
Ser	Ser	Val	Gly	Leu	Ala	Ser	Pro	Ala	Met	Arg	Gly	Ser	Thr	Pro
2225						2230					2235			

Leu Asp 2240	Val Ala Ala Ala	Ser 2245	Val Met Asp Asn Asn	Glu Leu Ala 2250
Leu Ala 2255	Leu Arg Glu Pro	Asp 2260	Leu Glu Lys Val Val	Ala Arg Tyr 2265
Leu Ala 2270	Gly Cys Gly Leu	Gln 2275	Ser Cys Gln Met Leu	Val Ser Lys 2280
Gly Tyr 2285	Pro Asp Ile Gly	Trp 2290	Asn Pro Val Glu Gly	Glu Arg Tyr 2295
Leu Asp 2300	Phe Leu Arg Phe	Ala 2305	Val Phe Cys Asn Gly	Glu Ser Val 2310
Glu Glu 2315	Asn Ala Asn Val	Val 2320	Val Arg Leu Leu Ile	Arg Arg Pro 2325
Glu Cys 2330	Phe Gly Pro Ala	Leu 2335	Arg Gly Glu Gly Gly	Asn Gly Leu 2340
Leu Ala 2345	Ala Met Glu Glu	Ala 2350	Ile Lys Ile Ala Glu	Asp Pro Ser 2355
Arg Asp 2360	Gly Pro Ser Pro	Thr 2365	Ser Gly Ser Ser Lys	Thr Leu Asp 2370
Ile Glu 2375	Glu Glu Glu Asp	Asp 2380	Thr Ile His Met Gly	Asn Ala Ile 2385
Met Thr 2390	Phe Tyr Ala Ala	Leu 2395	Ile Asp Leu Leu Gly	Arg Cys Ala 2400
Pro Glu 2405	Met His Leu Ile	His 2410	Ala Gly Lys Gly Glu	Ala Ile Arg 2415
Ile Arg 2420	Ser Ile Leu Arg	Ser 2425	Leu Ile Pro Leu Gly	Asp Leu Val 2430
Gly Val 2435	Ile Ser Ile Ala	Phe 2440	Gln Met Pro Thr Ile	Ala Lys Asp 2445
Gly Lys 2450	Val Val Glu Pro	Asp 2455	Met Ser Ala Gly Phe	Cys Pro Asp 2460
His Lys 2465	Ala Ala Met Val	Leu 2470	Phe Leu Asp Arg Val	Tyr Gly Ile 2475
Glu Val 2480	Gln Asp Phe Leu	Leu 2485	His Leu Leu Glu Val	Gly Phe Leu 2490
Pro Asp 2495	Leu Arg Ala Ala	Ala 2500	Ser Leu Asp Thr Ala	Ala Leu Ser 2505
Ala Thr 2510	Asp Met Ala Leu	Ala 2515	Leu Asn Arg Tyr Leu	Cys Thr Ala 2520
Val Leu 2525	Pro Leu Leu Thr	Arg 2530	Cys Ala Arg Leu Phe	Ala Gly Thr 2535

Glu	His	His	Ala	Ser	Leu	Ile	Asp	Ser	Leu	Leu	His	Thr	Val	Tyr
2540						2545					2550			
Arg	Leu	Ser	Lys	Gly	Cys	Ser	Leu	Thr	Lys	Ala	Gln	Arg	Asp	Ser
2555						2560					2565			
Ile	Glu	Val	Cys	Leu	Leu	Ser	Ile	Cys	Gly	Gln	Leu	Arg	Pro	Ser
2570						2575					2580			
Met	Met	Gln	His	Leu	Leu	Arg	Arg	Leu	Val	Phe	Asp	Val	Pro	Leu
2585						2590					2595			
Leu	Asn	Glu	His	Ala	Lys	Met	Pro	Leu	Lys	Leu	Leu	Thr	Asn	His
2600						2605					2610			
Tyr	Glu	Arg	Cys	Trp	Lys	Tyr	Tyr	Cys	Leu	Pro	Gly	Gly	Trp	Gly
2615						2620					2625			
Asn	Phe	Gly	Ala	Ala	Ser	Glu	Glu	Glu	Leu	His	Leu	Ser	Arg	Lys
2630						2635					2640			
Leu	Phe	Trp	Gly	Ile	Phe	Asp	Ala	Leu	Ser	Gln	Lys	Lys	Tyr	Glu
2645						2650					2655			
Gln	Glu	Leu	Phe	Lys	Leu	Ala	Leu	Pro	Cys	Leu	Ser	Ala	Val	Ala
2660						2665					2670			
Gly	Ala	Leu	Pro	Pro	Asp	Tyr	Met	Glu	Ser	Asn	Tyr	Val	Ser	Met
2675						2680					2685			
Met	Glu	Lys	Gln	Ser	Ser	Met	Asp	Ser	Glu	Gly	Asn	Phe	Asn	Pro
2690						2695					2700			
Gln	Pro	Val	Asp	Thr	Ser	Asn	Ile	Thr	Ile	Pro	Glu	Lys	Leu	Glu
2705						2710					2715			
Tyr	Phe	Ile	Asn	Lys	Tyr	Ala	Glu	His	Ser	His	Asp	Lys	Trp	Ser
2720						2725					2730			
Met	Asp	Lys	Leu	Ala	Asn	Gly	Trp	Ile	Tyr	Gly	Glu	Ile	Tyr	Ser
2735						2740					2745			
Asp	Ser	Ser	Lys	Ile	Gln	Pro	Leu	Met	Lys	Pro	Tyr	Lys	Leu	Leu
2750						2755					2760			
Ser	Glu	Lys	Glu	Lys	Glu	Ile	Tyr	Arg	Trp	Pro	Ile	Lys	Glu	Ser
2765						2770					2775			
Leu	Lys	Thr	Met	Leu	Ala	Trp	Gly	Trp	Arg	Ile	Glu	Arg	Thr	Arg
2780						2785					2790			
Glu	Gly	Asp	Ser	Met	Ala	Leu	Tyr	Asn	Arg	Thr	Arg	Arg	Ile	Ser
2795						2800					2805			
Gln	Thr	Ser	Gln	Val	Ser	Ile	Asp	Ala	Ala	His	Gly	Tyr	Ser	Pro
2810						2815					2820			
Arg	Ala	Ile	Asp	Met	Ser	Asn	Val	Thr	Leu	Ser	Arg	Asp	Leu	His
2825						2830					2835			

Ala Met 2840	Ala Glu Met Met 2845	Ala Glu Asn Tyr His Asn 2850	Ile Trp Ala
Lys Lys 2855	Lys Lys Leu Glu Leu 2860	Glu Ser Lys Gly Gly 2865	Gly Asn His
Pro Leu 2870	Leu Val Pro Tyr Asp 2875	Thr Leu Thr Ala Lys 2880	Glu Lys Ala
Lys Asp 2885	Arg Glu Lys Ala Gln 2890	Asp Ile Phe Lys Phe 2895	Leu Gln Ile
Ser Gly 2900	Tyr Val Val Ser Arg 2905	Gly Phe Lys Asp Leu 2910	Asp Leu Asp
Thr Pro 2915	Ser Ile Glu Lys Arg 2920	Phe Ala Tyr Ser Phe 2925	Leu Gln Gln
Leu Ile 2930	Arg Tyr Val Asp Glu 2935	Ala His Gln Tyr Ile 2940	Leu Glu Phe
Asp Gly 2945	Gly Ser Arg Ser Lys 2950	Gly Glu His Phe Pro 2955	Tyr Glu Gln
Glu Ile 2960	Lys Phe Phe Ala Lys 2965	Val Val Leu Pro Leu 2970	Ile Asp Gln
Tyr Phe 2975	Lys Asn His Arg Leu 2980	Tyr Phe Leu Ser Ala 2985	Ala Ser Arg
Pro Leu 2990	Cys Thr Gly Gly His 2995	Ala Ser Asn Lys Glu 3000	Lys Glu Met
Val Thr 3005	Ser Leu Phe Cys Lys 3010	Leu Gly Val Leu Val 3015	Arg His Arg
Ile Ser 3020	Leu Phe Gly Asn Asp 3025	Ala Thr Ser Ile Val 3030	Asn Cys Leu
His Ile 3035	Leu Gly Gln Thr Leu 3040	Asp Ala Arg Thr Val 3045	Met Lys Thr
Gly Leu 3050	Asp Ser Val Lys Ser 3055	Ala Leu Arg Ala Phe 3060	Leu Asp Asn
Ala Ala 3065	Glu Asp Leu Glu Lys 3070	Thr Met Glu Asn Leu 3075	Lys Gln Gly
Gln Phe 3080	Thr His Thr Arg Ser 3085	Gln Pro Lys Gly Val 3090	Thr Gln Ile
Ile Asn 3095	Tyr Thr Thr Val Ala 3100	Leu Leu Pro Met Leu 3105	Ser Ser Leu
Phe Glu 3110	His Ile Gly Gln His 3115	Gln Phe Gly Glu Asp 3120	Leu Ile Leu
Glu Asp 3125	Val Gln Val Ser Cys 3130	Tyr Arg Ile Leu Thr 3135	Ser Leu Tyr

Ala Leu Gly Thr Ser Lys Ser Ile Tyr Val Glu Arg Gln Arg Ser 3140 3145 3150
Ala Leu Gly Glu Cys Leu Ala Ala Phe Ala Gly Ala Phe Pro Ile 3155 3160 3165
Ala Phe Leu Glu Thr His Leu Asp Lys His Asn Val Tyr Ser Ile 3170 3175 3180
Tyr Asn Thr Arg Ser Ser Arg Glu Arg Thr Ala Leu Ser Leu Pro 3185 3190 3195
Ala Asn Val Glu Asp Val Cys Pro Asn Ile Pro Ser Leu Glu Lys 3200 3205 3210
Leu Met Thr Glu Ile Ile Glu Leu Ala Glu Ser Gly Ile Arg Tyr 3215 3220 3225
Thr Gln Met Pro Tyr Met Met Glu Val Val Leu Pro Met Leu Cys 3230 3235 3240
Ser Tyr Met Ser Arg Trp Trp Glu His Gly Pro Glu Asn His Pro 3245 3250 3255
Glu Arg Ala Glu Met Cys Cys Thr Ala Leu Asn Ser Glu His Met 3260 3265 3270
Asn Thr Leu Leu Gly Asn Ile Leu Lys Ile Ile Tyr Asn Asn Leu 3275 3280 3285
Gly Ile Asp Glu Gly Ala Trp Met Lys Arg Leu Ala Val Phe Ser 3290 3295 3300
Gln Pro Ile Ile Asn Lys Val Lys Pro Gln Leu Leu Lys Thr His 3305 3310 3315
Phe Leu Pro Leu Met Glu Lys Leu Lys Lys Lys Ala Ala Met Val 3320 3325 3330
Val Ser Glu Glu Asp His Leu Lys Ala Glu Ala Arg Gly Asp Met 3335 3340 3345
Ser Glu Ala Glu Leu Leu Ile Leu Asp Glu Phe Thr Thr Leu Ala 3350 3355 3360
Arg Asp Leu Tyr Ala Phe Tyr Pro Leu Leu Ile Arg Phe Val Asp 3365 3370 3375
Tyr Asn Arg Ala Lys Trp Leu Lys Glu Pro Asn Pro Glu Ala Glu 3380 3385 3390
Glu Leu Phe Arg Met Val Ala Glu Val Phe Ile Tyr Trp Ser Lys 3395 3400 3405
Ser His Asn Phe Lys Arg Glu Glu Gln Asn Phe Val Val Gln Asn 3410 3415 3420
Glu Ile Asn Asn Met Ser Phe Leu Ile Thr Asp Thr Lys Ser Lys 3425 3430 3435

Met	Ser	Lys	Ala	Ala	Ile	Ser	Asp	Gln	Glu	Arg	Lys	Lys	Met	Lys
3440						3445					3450			
Arg	Lys	Gly	Asp	Arg	Tyr	Ser	Met	Gln	Thr	Ser	Leu	Ile	Val	Ala
3455						3460					3465			
Ala	Leu	Lys	Arg	Leu	Leu	Pro	Ile	Gly	Leu	Asn	Ile	Cys	Ala	Pro
3470						3475					3480			
Gly	Asp	Gln	Glu	Leu	Ile	Ala	Leu	Ala	Lys	Asn	Arg	Phe	Ser	Leu
3485						3490					3495			
Lys	Asp	Thr	Glu	Glu	Glu	Val	Arg	Asp	Ile	Ile	Arg	Ser	Asn	Ile
3500						3505					3510			
His	Leu	Gln	Gly	Lys	Leu	Glu	Asp	Pro	Ala	Ile	Arg	Trp	Gln	Met
3515						3520					3525			
Ala	Leu	Tyr	Lys	Asp	Phe	Pro	Asn	Arg	Thr	Glu	Asp	Pro	Ser	Asp
3530						3535					3540			
Pro	Glu	Arg	Thr	Val	Glu	Arg	Val	Leu	Gly	Ile	Ala	Asn	Val	Leu
3545						3550					3555			
Phe	His	Leu	Glu	Gln	Lys	Ser	Lys	Tyr	Thr	Gly	Arg	Gly	Tyr	Phe
3560						3565					3570			
Ser	Leu	Val	Glu	His	Pro	Gln	Arg	Ser	Lys	Lys	Ala	Val	Trp	His
3575						3580					3585			
Lys	Leu	Leu	Ser	Lys	Gln	Arg	Lys	Arg	Ala	Val	Val	Ala	Cys	Phe
3590						3595					3600			
Arg	Met	Ala	Pro	Leu	Tyr	Asn	Leu	Pro	Arg	His	Arg	Ala	Val	Asn
3605						3610					3615			
Leu	Phe	Leu	Gln	Gly	Tyr	Glu	Lys	Ser	Trp	Ile	Glu	Thr	Glu	Glu
3620						3625					3630			
His	Tyr	Phe	Glu	Asp	Lys	Leu	Ile	Glu	Asp	Leu	Ala	Lys	Pro	Gly
3635						3640					3645			
Ala	Glu	Leu	Pro	Glu	Glu	Asp	Glu	Ala	Met	Lys	Arg	Val	Asp	Pro
3650						3655					3660			
Leu	His	Gln	Leu	Ile	Leu	Leu	Phe	Ser	Arg	Thr	Ala	Leu	Thr	Glu
3665						3670					3675			
Lys	Cys	Lys	Leu	Glu	Glu	Asp	Phe	Leu	Tyr	Met	Ala	Tyr	Ala	Asp
3680						3685					3690			
Ile	Met	Ala	Lys	Ser	Cys	His	Asp	Glu	Glu	Asp	Asp	Asp	Gly	Glu
3695						3700					3705			
Glu	Glu	Val	Lys	Ser	Phe	Glu	Glu	Lys	Glu	Met	Glu	Lys	Gln	Lys
3710						3715					3720			
Leu	Leu	Tyr	Gln	Gln	Ala	Arg	Leu	His	Asp	Arg	Gly	Ala	Ala	Glu
3725						3730					3735			



Met	Val	Leu	Gln	Thr	Ile	Ser	Ala	Ser	Lys	Gly	Glu	Thr	Gly	Pro
3740						3745					3750			
Met	Val	Ala	Ala	Thr	Leu	Lys	Leu	Gly	Ile	Ala	Ile	Leu	Asn	Gly
3755						3760					3765			
Gly	Asn	Ser	Thr	Val	Gln	Gln	Lys	Met	Leu	Asp	Tyr	Leu	Lys	Glu
3770						3775					3780			
Lys	Lys	Asp	Val	Gly	Phe	Phe	Gln	Ser	Leu	Ala	Gly	Leu	Met	Gln
3785						3790					3795			
Ser	Cys	Ser	Val	Leu	Asp	Leu	Asn	Ala	Phe	Glu	Arg	Gln	Asn	Lys
3800						3805					3810			
Ala	Glu	Gly	Leu	Gly	Met	Val	Thr	Glu	Glu	Gly	Ser	Gly	Glu	Lys
3815						3820					3825			
Val	Leu	Gln	Asp	Asp	Glu	Phe	Thr	Cys	Asp	Leu	Phe	Arg	Phe	Leu
3830						3835					3840			
Gln	Leu	Leu	Cys	Glu	Gly	His	Asn	Ser	Asp	Phe	Gln	Asn	Tyr	Leu
3845						3850					3855			
Arg	Thr	Gln	Thr	Gly	Asn	Asn	Thr	Thr	Val	Asn	Ile	Ile	Ile	Ser
3860						3865					3870			
Thr	Val	Asp	Tyr	Leu	Leu	Arg	Val	Gln	Glu	Ser	Ile	Ser	Asp	Phe
3875						3880					3885			
Tyr	Trp	Tyr	Tyr	Ser	Gly	Lys	Asp	Ile	Ile	Asp	Glu	Gln	Gly	Gln
3890						3895					3900			
Arg	Asn	Phe	Ser	Lys	Ala	Ile	Gln	Val	Ala	Lys	Gln	Val	Phe	Asn
3905						3910					3915			
Thr	Leu	Thr	Glu	Tyr	Ile	Gln	Gly	Pro	Cys	Thr	Gly	Asn	Gln	Gln
3920						3925					3930			
Ser	Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Val	Gly	Phe	Leu
3935						3940					3945			
His	Val	Phe	Ala	His	Met	Gln	Met	Lys	Leu	Ser	Gln	Asp	Ser	Ser
3950						3955					3960			
Gln	Ile	Glu	Leu	Leu	Lys	Glu	Leu	Met	Asp	Leu	Gln	Lys	Asp	Met
3965						3970					3975			
Val	Val	Met	Leu	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly
3980						3985					3990			
Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	Met	Leu	Val	Glu	Ser	Ser	Asn
3995						4000					4005			
Asn	Val	Glu	Met	Ile	Leu	Lys	Phe	Phe	Asp	Met	Phe	Leu	Lys	Leu
4010						4015					4020			
Lys	Asp	Leu	Thr	Ser	Ser	Asp	Thr	Phe	Lys	Glu	Tyr	Asp	Pro	Asp
4025						4030					4035			

Gly	Lys	Gly	Val	Ile	Ser	Lys	Arg	Asp	Phe	His	Lys	Ala	Met	Glu
4040						4045					4050			
Ser	His	Lys	His	Tyr	Thr	Gln	Ser	Glu	Thr	Glu	Phe	Leu	Leu	Ser
4055						4060					4065			
Cys	Ala	Glu	Thr	Asp	Glu	Asn	Glu	Thr	Leu	Asp	Tyr	Glu	Glu	Phe
4070						4075					4080			
Val	Lys	Arg	Phe	His	Glu	Pro	Ala	Lys	Asp	Ile	Gly	Phe	Asn	Val
4085						4090					4095			
Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Asp	Thr
4100						4105					4110			
Arg	Leu	Gln	Thr	Phe	Leu	Glu	Leu	Ala	Glu	Ser	Val	Leu	Asn	Tyr
4115						4120					4125			
Phe	Gln	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Ser	Ala	Lys
4130						4135					4140			
Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Ser	Glu	Ser	Ser	Arg	Thr
4145						4150					4155			
Gln	Trp	Glu	Lys	Pro	Gln	Val	Lys	Glu	Ser	Lys	Arg	Gln	Phe	Ile
4160						4165					4170			
Phe	Asp	Val	Val	Asn	Glu	Gly	Gly	Glu	Lys	Glu	Lys	Met	Glu	Leu
4175						4180					4185			
Phe	Val	Asn	Phe	Cys	Glu	Asp	Thr	Ile	Phe	Glu	Met	Gln	Leu	Ala
4190						4195					4200			
Ala	Gln	Ile	Ser	Glu	Ser	Asp	Leu	Asn	Glu	Arg	Leu	Ala	Asn	Lys
4205						4210					4215			
Glu	Glu	Ser	Glu	Lys	Glu	Arg	Pro	Glu	Glu	Gln	Ala	Pro	Arg	Met
4220						4225					4230			
Gly	Phe	Phe	Ser	Leu	Leu	Thr	Ile	Gln	Ser	Ala	Leu	Phe	Ala	Leu
4235						4240					4245			
Arg	Tyr	Asn	Val	Leu	Thr	Leu	Val	Arg	Met	Leu	Ser	Leu	Lys	Ser
4250						4255					4260			
Leu	Lys	Lys	Gln	Met	Lys	Arg	Met	Lys	Lys	Met	Thr	Val	Lys	Asp
4265						4270					4275			
Met	Val	Leu	Ala	Phe	Phe	Ser	Ser	Tyr	Trp	Ser	Val	Phe	Val	Thr
4280						4285					4290			
Leu	Leu	His	Phe	Val	Ala	Ser	Val	Cys	Arg	Gly	Phe	Phe	Arg	Ile
4295						4300					4305			
Val	Ser	Ser	Leu	Leu	Leu	Gly	Gly	Ser	Leu	Val	Glu	Gly	Ala	Lys
4310						4315					4320			
Lys	Ile	Lys	Val	Ala	Glu	Leu	Leu	Ala	Asn	Met	Pro	Asp	Pro	Thr
4325						4330					4335			

Gln Asp	Glu Val Arg Gly Asp	Glu Glu Glu Gly Glu	Arg Lys Pro
4340	4345	4350	
Leu Glu	Ser Ala Leu Pro Ser	Glu Asp Leu Thr Asp	Leu Lys Glu
4355	4360	4365	
Leu Thr	Glu Glu Ser Asp Leu	Leu Ser Asp Ile Phe	Gly Leu Asp
4370	4375	4380	
Leu Lys	Arg Glu Gly Gly Gln	Tyr Lys Leu Ile Pro	His Asn Pro
4385	4390	4395	
Asn Ala	Gly Leu Ser Asp Leu	Met Thr Asn Pro Val	Pro Val Pro
4400	4405	4410	
Glu Val	Gln Glu Lys Phe Gln	Glu Gln Lys Ala Lys	Glu Glu Lys
4415	4420	4425	
Glu Glu	Lys Glu Glu Thr Lys	Ser Glu Pro Glu Lys	Ala Glu Gly
4430	4435	4440	
Glu Asp	Gly Glu Lys Glu Glu	Lys Ala Lys Asp Glu	Lys Ser Lys
4445	4450	4455	
Gln Lys	Leu Arg Gln Leu His	Thr His Arg Tyr Gly	Glu Pro Glu
4460	4465	4470	
Val Pro	Glu Ser Ala Phe Trp	Lys Lys Ile Ile Ala	Tyr Gln Gln
4475	4480	4485	
Lys Leu	Leu Asn Tyr Phe Ala	Arg Asn Phe Tyr Asn	Met Arg Met
4490	4495	4500	
Leu Ala	Leu Phe Val Ala Phe	Ala Ile Asn Phe Ile	Leu Leu Phe
4505	4510	4515	
Tyr Lys	Val Ser Thr Ser Ser	Val Val Glu Gly Lys	Glu Leu Pro
4520	4525	4530	
Thr Arg	Thr Ser Ser Asp Thr	Ala Lys Val Thr Asn	Ser Leu Asp
4535	4540	4545	
Ser Ser	Pro His Arg Ile Ile	Ala Val His Tyr Val	Leu Glu Glu
4550	4555	4560	
Ser Ser	Gly Tyr Met Glu Pro	Thr Leu Arg Ile Leu	Ala Ile Leu
4565	4570	4575	
His Thr	Ile Ile Ser Phe Phe	Cys Ile Ile Gly Tyr	Tyr Cys Leu
4580	4585	4590	
Lys Val	Pro Leu Val Ile Phe	Lys Arg Glu Lys Glu	Val Ala Arg
4595	4600	4605	
Lys Leu	Glu Phe Asp Gly Leu	Tyr Ile Thr Glu Gln	Pro Ser Glu
4610	4615	4620	
Asp Asp	Ile Lys Gly Gln Trp	Asp Arg Leu Val Ile	Asn Thr Gln
4625	4630	4635	

Ser	Phe	Pro	Asn	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Arg	Lys	Val
4640						4645					4650			
Met	Asp	Lys	Tyr	Gly	Glu	Phe	Tyr	Gly	Arg	Asp	Arg	Ile	Ser	Glu
4655						4660					4665			
Leu	Leu	Gly	Met	Asp	Lys	Ala	Ala	Leu	Asp	Phe	Ser	Asp	Ala	Arg
4670						4675					4680			
Glu	Lys	Lys	Lys	Pro	Lys	Lys	Asp	Ser	Ser	Leu	Ser	Ala	Val	Leu
4685						4690					4695			
Asn	Ser	Ile	Asp	Val	Lys	Tyr	Gln	Met	Trp	Lys	Leu	Gly	Val	Val
4700						4705					4710			
Phe	Thr	Asp	Asn	Ser	Phe	Leu	Tyr	Leu	Ala	Trp	Tyr	Met	Thr	Met
4715						4720					4725			
Ser	Val	Leu	Gly	His	Tyr	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu
4730						4735					4740			
Leu	Asp	Ile	Ala	Met	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Ser
4745						4750					4755			
Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Gly	Leu
4760						4765					4770			
Leu	Ala	Val	Val	Val	Tyr	Leu	Tyr	Thr	Val	Val	Ala	Phe	Asn	Phe
4775						4780					4785			
Phe	Arg	Lys	Phe	Tyr	Asn	Lys	Ser	Glu	Asp	Gly	Asp	Thr	Pro	Asp
4790						4795					4800			
Met	Lys	Cys	Asp	Asp	Met	Leu	Thr	Cys	Tyr	Met	Phe	His	Met	Tyr
4805						4810					4815			
Val	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Ile	Glu	Asp
4820						4825					4830			
Pro	Ala	Gly	Asp	Glu	Tyr	Glu	Ile	Tyr	Arg	Ile	Ile	Phe	Asp	Ile
4835						4840					4845			
Thr	Phe	Phe	Phe	Phe	Val	Ile	Val	Ile	Leu	Leu	Ala	Ile	Ile	Gln
4850						4855					4860			
Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Gln	Glu
4865						4870					4875			
Gln	Val	Lys	Glu	Asp	Met	Glu	Thr	Lys	Cys	Phe	Ile	Cys	Gly	Ile
4880						4885					4890			
Gly	Asn	Asp	Tyr	Phe	Asp	Thr	Val	Pro	His	Gly	Phe	Glu	Thr	His
4895						4900					4905			
Thr	Leu	Gln	Glu	His	Asn	Leu	Ala	Asn	Tyr	Leu	Phe	Phe	Leu	Met
4910						4915					4920			
Tyr	Leu	Ile	Asn	Lys	Asp	Glu	Thr	Glu	His	Thr	Gly	Gln	Glu	Ser
4925						4930					4935			

Tyr Val Trp Lys Met Tyr Gln Glu Arg Cys Trp Glu Phe Phe Pro  
 4940 4945 4950

Ala Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Gln Leu Asn  
 4955 4960 4965

<210> 61  
 <211> 4968  
 <212> PRT  
 <213> *Oryctolagus cuniculus*

<400> 61  
 Met Ala Asp Gly Gly Glu Gly Glu Asp Glu Ile Gln Phe Leu Arg Thr  
 1 5 10 15  
 Asp Asp Glu Val Val Leu Gln Cys Thr Ala Thr Ile His Lys Glu Gln  
 20 25 30  
 Gln Lys Leu Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg Leu Cys Phe  
 35 40 45  
 Leu Glu Ser Thr Ser Asn Ser Lys Asn Val Pro Pro Asp Leu Ser Ile  
 50 55 60  
 Cys Thr Phe Val Leu Glu Gln Ser Leu Ser Val Arg Ala Leu Gln Glu  
 65 70 75 80  
 Met Leu Ala Asn Thr Val Glu Lys Ser Glu Gly Gln Val Asp Val Glu  
 85 90 95  
 Lys Trp Lys Phe Met Met Lys Thr Ala Gln Gly Gly Gly His Arg Thr  
 100 105 110  
 Leu Leu Tyr Gly His Ala Ile Leu Leu Arg His Ser Tyr Ser Gly Met  
 115 120 125  
 Tyr Leu Cys Cys Leu Ser Thr Ser Arg Ser Ser Thr Asp Lys Leu Ala  
 130 135 140  
 Phe Asp Val Gly Leu Gln Glu Asp Thr Thr Gly Glu Ala Cys Trp Trp  
 145 150 155 160  
 Thr Ile His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
 165 170 175  
 Val Gly Asp Asp Leu Ile Leu Val Ser Val Ser Ser Glu Arg Tyr Leu  
 180 185 190  
 His Leu Ser Tyr Gly Asn Gly Ser Leu His Val Asp Ala Ala Phe Gln  
 195 200 205  
 Gln Thr Leu Trp Ser Val Ala Pro Ile Ser Ser Gly Ser Glu Ala Ala  
 210 215 220  
 Gln Gly Tyr Leu Ile Gly Gly Asp Val Leu Arg Leu Leu His Gly His  
 225 230 235 240  
 Met Asp Glu Cys Leu Thr Val Pro Ser Gly Glu His Gly Glu Glu Gln  
 245 250 255

Arg	Arg	Thr	Val	His	Tyr	Glu	Gly	Gly	Ala	Val	Ser	Val	His	Ala	Arg	
			260					265					270			
Ser	Leu	Trp	Arg	Leu	Glu	Thr	Leu	Arg	Val	Ala	Trp	Ser	Gly	Ser	His	
		275					280					285				
Ile	Arg	Trp	Gly	Gln	Pro	Phe	Arg	Leu	Arg	His	Val	Thr	Thr	Gly	Lys	
	290					295					300					
Tyr	Leu	Ser	Leu	Met	Glu	Asp	Lys	Asn	Leu	Leu	Leu	Met	Asp	Lys	Glu	
305					310					315					320	
Lys	Ala	Asp	Val	Lys	Ser	Thr	Ala	Phe	Thr	Phe	Arg	Ser	Ser	Lys	Glu	
				325					330					335		
Lys	Leu	Asp	Gly	Gly	Val	Arg	Lys	Glu	Val	Asp	Gly	Met	Gly	Thr	Ser	
			340					345					350			
Glu	Ile	Lys	Tyr	Gly	Asp	Ser	Ile	Cys	Tyr	Ile	Gln	His	Val	Asp	Thr	
		355					360					365				
Gly	Leu	Trp	Leu	Thr	Tyr	Gln	Ser	Val	Asp	Val	Lys	Ser	Val	Arg	Met	
	370					375					380					
Gly	Ser	Ile	Gln	Arg	Lys	Ala	Ile	Met	His	His	Glu	Gly	His	Met	Asp	
385					390					395					400	
Asp	Gly	Leu	Asn	Leu	Ser	Arg	Ser	Gln	His	Glu	Glu	Ser	Arg	Thr	Ala	
			405						410					415		
Arg	Val	Ile	Arg	Ser	Thr	Val	Phe	Leu	Phe	Asn	Arg	Phe	Ile	Arg	Gly	
			420					425					430			
Leu	Asp	Ala	Leu	Ser	Lys	Lys	Ala	Lys	Ala	Ser	Ser	Val	Asp	Leu	Pro	
		435					440					445				
Ile	Glu	Ser	Val	Ser	Leu	Ser	Leu	Gln	Asp	Leu	Ile	Gly	Tyr	Phe	His	
	450					455					460					
Pro	Pro	Asp	Glu	His	Leu	Glu	His	Glu	Asp	Lys	Gln	Asn	Arg	Leu	Arg	
465					470					475					480	
Ala	Leu	Lys	Asn	Arg	Gln	Asn	Leu	Phe	Gln	Glu	Glu	Gly	Met	Ile	Asn	
			485						490					495		
Leu	Val	Leu	Glu	Cys	Ile	Asp	Arg	Leu	His	Val	Tyr	Ser	Ser	Ala	Ala	
			500					505					510			
His	Phe	Ala	Asp	Val	Ala	Gly	Arg	Glu	Ala	Gly	Glu	Ser	Trp	Lys	Ser	
		515					520					525				
Ile	Leu	Asn	Ser	Leu	Tyr	Glu	Leu	Leu	Ala	Ala	Leu	Ile	Arg	Gly	Asn	
	530					535					540					
Arg	Lys	Asn	Cys	Ala	Gln	Phe	Ser	Gly	Ser	Leu	Asp	Trp	Leu	Ile	Ser	
545					550					555					560	
Arg	Leu	Glu	Arg	Leu	Glu	Ala	Ser	Ser	Gly	Ile	Leu	Glu	Val	Leu	His	
				565					570					575		

Cys	Val	Leu	Val	Glu	Ser	Pro	Glu	Ala	Leu	Asn	Ile	Ile	Lys	Glu	Gly	580	585	590
His	Ile	Lys	Ser	Ile	Ile	Ser	Leu	Leu	Asp	Lys	His	Gly	Arg	Asn	His	595	600	605
Lys	Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Cys	His	Gly	Val	Ala	610	615	620
Val	Arg	Ser	Asn	Gln	His	Leu	Ile	Cys	Asp	Asn	Leu	Leu	Pro	Gly	Arg	625	630	635
Asp	Leu	Leu	Leu	Gln	Thr	Arg	Leu	Val	Asn	His	Val	Ser	Ser	Met	Arg	645	650	655
Pro	Asn	Ile	Phe	Leu	Gly	Val	Ser	Glu	Gly	Ser	Ala	Gln	Tyr	Lys	Lys	660	665	670
Trp	Tyr	Tyr	Glu	Leu	Met	Val	Asp	His	Thr	Glu	Pro	Phe	Val	Thr	Ala	675	680	685
Glu	Ala	Thr	His	Leu	Arg	Val	Gly	Trp	Ala	Ser	Thr	Glu	Gly	Tyr	Ser	690	695	700
Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Glu	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	705	710	715
Asp	Leu	Phe	Ser	Tyr	Gly	Phe	Asp	Gly	Leu	His	Leu	Trp	Ser	Gly	Cys	725	730	735
Ile	Ala	Arg	Thr	Val	Ser	Ser	Pro	Asn	Gln	His	Leu	Leu	Arg	Thr	Asp	740	745	750
Asp	Val	Ile	Ser	Cys	Cys	Leu	Asp	Leu	Ser	Ala	Pro	Ser	Ile	Ser	Phe	755	760	765
Arg	Ile	Asn	Gly	Gln	Pro	Val	Gln	Gly	Met	Phe	Glu	Asn	Phe	Asn	Ile	770	775	780
Asp	Gly	Leu	Phe	Phe	Pro	Val	Val	Ser	Phe	Ser	Ala	Gly	Ile	Lys	Val	785	790	795
Arg	Phe	Leu	Leu	Gly	Gly	Arg	His	Gly	Glu	Phe	Lys	Phe	Leu	Pro	Pro	805	810	815
Pro	Gly	Tyr	Ala	Pro	Cys	Tyr	Glu	Ala	Val	Leu	Pro	Lys	Glu	Lys	Leu	820	825	830
Lys	Val	Glu	His	Ser	Arg	Glu	Tyr	Lys	Gln	Glu	Arg	Thr	Tyr	Thr	Arg	835	840	845
Asp	Leu	Leu	Gly	Pro	Thr	Val	Ser	Leu	Thr	Gln	Ala	Ala	Phe	Thr	Pro	850	855	860
Ile	Pro	Val	Asp	Thr	Ser	Gln	Ile	Val	Leu	Pro	Pro	His	Leu	Glu	Arg	865	870	875
Ile	Arg	Glu	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	Leu	Trp	Val	Met	Asn	885	890	895

Lys Ile Glu Leu Gly Trp Gln Tyr Gly Pro Val Arg Asp Asp Asn Lys  
 900 905 910  
 Arg Gln His Pro Cys Leu Val Glu Phe Ser Lys Leu Pro Glu Gln Glu  
 915 920 925  
 Arg Asn Tyr Asn Leu Gln Met Ser Leu Glu Thr Leu Lys Thr Leu Leu  
 930 935 940  
 Ala Leu Gly Cys His Val Gly Ile Ser Asp Glu His Ala Glu Glu Lys  
 945 950 955 960  
 Val Lys Lys Met Lys Leu Pro Lys Asn Tyr Gln Leu Thr Ser Gly Tyr  
 965 970 975  
 Lys Pro Ala Pro Met Asp Leu Ser Phe Ile Lys Leu Thr Pro Ser Gln  
 980 985 990  
 Glu Ala Met Val Asp Lys Leu Ala Glu Asn Ala His Asn Val Trp Ala  
 995 1000 1005  
 Arg Asp Arg Ile Arg Gln Gly Trp Thr Tyr Gly Ile Gln Gln Asp  
 1010 1015 1020  
 Val Lys Asn Arg Arg Asn Pro Arg Leu Val Pro Tyr Thr Leu Leu  
 1025 1030 1035  
 Asp Asp Arg Thr Lys Lys Ser Asn Lys Asp Ser Leu Arg Glu Ala  
 1040 1045 1050  
 Val Arg Thr Leu Leu Gly Tyr Gly Tyr Asn Leu Glu Ala Pro Asp  
 1055 1060 1065  
 Gln Asp His Ala Ala Arg Ala Glu Val Cys Ser Gly Thr Gly Glu  
 1070 1075 1080  
 Arg Phe Arg Ile Phe Arg Ala Glu Lys Thr Tyr Ala Val Lys Ala  
 1085 1090 1095  
 Gly Arg Trp Tyr Phe Glu Phe Glu Ala Val Thr Ser Gly Asp Met  
 1100 1105 1110  
 Arg Val Gly Trp Ser Arg Pro Gly Cys Gln Pro Asp Gln Glu Leu  
 1115 1120 1125  
 Gly Ser Asp Glu Arg Ala Phe Ala Phe Asp Gly Phe Lys Ala Gln  
 1130 1135 1140  
 Arg Trp His Gln Gly Asn Glu His Tyr Gly Arg Ser Trp Gln Ala  
 1145 1150 1155  
 Gly Asp Val Val Gly Cys Met Val Asp Met Asn Glu His Thr Met  
 1160 1165 1170  
 Met Phe Thr Leu Asn Gly Glu Ile Leu Leu Asp Asp Ser Gly Ser  
 1175 1180 1185  
 Glu Leu Ala Phe Lys Asp Phe Asp Val Gly Asp Gly Phe Ile Pro  
 1190 1195 1200



Val	Cys	Ser	Leu	Gly	Val	Ala	Gln	Val	Gly	Arg	Met	Asn	Phe	Gly
1205						1210					1215			
Lys	Asp	Val	Ser	Thr	Leu	Lys	Tyr	Phe	Thr	Ile	Cys	Gly	Leu	Gln
1220						1225					1230			
Glu	Gly	Tyr	Glu	Pro	Phe	Ala	Val	Asn	Thr	Asn	Arg	Asp	Ile	Thr
1235						1240					1245			
Met	Trp	Leu	Ser	Lys	Arg	Leu	Pro	Gln	Phe	Leu	Gln	Val	Pro	Ser
1250						1255					1260			
Asn	His	Glu	His	Ile	Glu	Val	Thr	Arg	Ile	Asp	Gly	Thr	Ile	Asp
1265						1270					1275			
Ser	Ser	Pro	Cys	Leu	Lys	Val	Thr	Gln	Lys	Ser	Phe	Gly	Ser	Gln
1280						1285					1290			
Asn	Ser	Asn	Thr	Asp	Ile	Met	Phe	Tyr	Arg	Leu	Ser	Met	Pro	Ile
1295						1300					1305			
Glu	Cys	Ala	Glu	Val	Phe	Ser	Lys	Thr	Val	Pro	Gly	Gly	Leu	Pro
1310						1315					1320			
Gly	Ala	Gly	Leu	Phe	Gly	Pro	Lys	Asn	Asp	Leu	Glu	Asp	Tyr	Asp
1325						1330					1335			
Ala	Asp	Ser	Asp	Phe	Glu	Val	Leu	Met	Lys	Thr	Ala	His	Gly	His
1340						1345					1350			
Leu	Val	Pro	Asp	Arg	Val	Asp	Lys	Asp	Lys	Glu	Thr	Thr	Lys	Ala
1355						1360					1365			
Glu	Phe	Asn	Asn	His	Lys	Asp	Tyr	Ala	Gln	Glu	Lys	Pro	Ser	Arg
1370						1375					1380			
Leu	Lys	Gln	Arg	Phe	Leu	Leu	Arg	Arg	Thr	Lys	Pro	Asp	Tyr	Ser
1385						1390					1395			
Thr	Ser	His	Ser	Ala	Arg	Leu	Thr	Glu	Asp	Val	Leu	Ala	Asp	Asp
1400						1405					1410			
Arg	Asp	Asp	Tyr	Asp	Phe	Leu	Met	Gln	Thr	Ser	Thr	Tyr	Tyr	Tyr
1415						1420					1425			
Ser	Val	Arg	Ile	Phe	Pro	Gly	Gln	Glu	Pro	Ala	Asn	Val	Trp	Val
1430						1435					1440			
Gly	Trp	Ile	Thr	Ser	Asp	Phe	His	Gln	Tyr	Asp	Thr	Gly	Phe	Asp
1445						1450					1455			
Leu	Asp	Arg	Val	Arg	Thr	Val	Thr	Val	Thr	Leu	Gly	Asp	Glu	Lys
1460						1465					1470			
Gly	Lys	Val	His	Glu	Ser	Ile	Lys	Arg	Ser	Asn	Cys	Tyr	Met	Val
1475						1480					1485			
Cys	Ala	Gly	Glu	Ser	Met	Ser	Pro	Gly	Gln	Gly	Arg	Asn	Asn	Asn
1490						1495					1500			

Gly	Leu	Glu	Ile	Gly	Cys	Val	Val	Asp	Ala	Ala	Ser	Gly	Leu	Leu
	1505					1510					1515			
Thr	Phe	Ile	Ala	Asn	Gly	Lys	Glu	Leu	Ser	Thr	Tyr	Tyr	Gln	Val
	1520					1525					1530			
Glu	Pro	Ser	Thr	Lys	Leu	Phe	Pro	Ala	Val	Phe	Ala	Gln	Ala	Thr
	1535					1540					1545			
Ser	Pro	Asn	Val	Phe	Gln	Phe	Glu	Leu	Gly	Arg	Ile	Lys	Asn	Val
	1550					1555					1560			
Met	Pro	Leu	Ser	Ala	Gly	Leu	Phe	Lys	Ser	Glu	His	Lys	Asn	Pro
	1565					1570					1575			
Val	Pro	Gln	Cys	Pro	Pro	Arg	Leu	His	Val	Gln	Phe	Leu	Ser	His
	1580					1585					1590			
Val	Leu	Trp	Ser	Arg	Met	Pro	Asn	Gln	Phe	Leu	Lys	Val	Asp	Val
	1595					1600					1605			
Ser	Arg	Ile	Ser	Glu	Arg	Gln	Gly	Trp	Leu	Val	Gln	Cys	Leu	Asp
	1610					1615					1620			
Pro	Leu	Gln	Phe	Met	Ser	Leu	His	Ile	Pro	Glu	Glu	Asn	Arg	Ser
	1625					1630					1635			
Val	Asp	Ile	Leu	Glu	Leu	Thr	Glu	Gln	Glu	Glu	Leu	Leu	Lys	Phe
	1640					1645					1650			
His	Tyr	His	Thr	Leu	Arg	Leu	Tyr	Ser	Ala	Val	Cys	Ala	Leu	Gly
	1655					1660					1665			
Asn	His	Arg	Val	Ala	His	Ala	Leu	Cys	Ser	His	Val	Asp	Glu	Pro
	1670					1675					1680			
Gln	Leu	Leu	Tyr	Ala	Ile	Glu	Asn	Lys	Tyr	Met	Pro	Gly	Leu	Leu
	1685					1690					1695			
Arg	Thr	Gly	Tyr	Tyr	Asp	Leu	Leu	Ile	Asp	Ile	His	Leu	Ser	Ser
	1700					1705					1710			
Tyr	Ala	Thr	Ala	Arg	Leu	Met	Met	Asn	Asn	Glu	Phe	Ile	Val	Pro
	1715					1720					1725			
Met	Thr	Glu	Glu	Thr	Lys	Ser	Ile	Thr	Leu	Phe	Pro	Asp	Glu	Asn
	1730					1735					1740			
Lys	Lys	His	Gly	Leu	Pro	Gly	Ile	Gly	Leu	Ser	Thr	Ser	Leu	Arg
	1745					1750					1755			
Pro	Arg	Met	Gln	Phe	Ser	Ser	Pro	Ser	Phe	Val	Ser	Ile	Asn	Asn
	1760					1765					1770			
Glu	Cys	Tyr	Gln	Tyr	Ser	Pro	Glu	Phe	Pro	Leu	Asp	Ile	Leu	Lys
	1775					1780					1785			
Ala	Lys	Thr	Ile	Gln	Met	Leu	Thr	Glu	Ala	Val	Lys	Glu	Gly	Ser
	1790					1795					1800			

Leu	His	Ala	Arg	Asp	Pro	Val	Gly	Gly	Thr	Thr	Glu	Phe	Leu	Phe
1805						1810					1815			
Val	Pro	Leu	Ile	Lys	Leu	Phe	Tyr	Thr	Leu	Leu	Ile	Met	Gly	Ile
1820						1825					1830			
Phe	His	Asn	Glu	Asp	Leu	Arg	His	Ile	Leu	Gln	Leu	Ile	Glu	Pro
1835						1840					1845			
Ser	Val	Phe	Lys	Asp	Ala	Ala	Thr	Pro	Glu	Glu	Glu	Gly	Asp	Thr
1850						1855					1860			
Leu	Glu	Glu	Glu	Pro	Ser	Val	Glu	Asp	Thr	Lys	Leu	Glu	Gly	Ala
1865						1870					1875			
Gly	Glu	Glu	Glu	Ala	Lys	Met	Gly	Lys	Arg	Pro	Lys	Glu	Gly	Leu
1880						1885					1890			
Leu	Gln	Met	Lys	Leu	Pro	Glu	Pro	Val	Lys	Leu	Gln	Met	Cys	Leu
1895						1900					1905			
Leu	Leu	Gln	Tyr	Leu	Cys	Asp	Cys	Gln	Val	Arg	His	Arg	Ile	Glu
1910						1915					1920			
Ala	Ile	Val	Ala	Phe	Ser	Asp	Asp	Phe	Val	Ala	Lys	Leu	Gln	Asp
1925						1930					1935			
Asn	Gln	Arg	Phe	Arg	Tyr	Asn	Glu	Val	Met	Gln	Ala	Leu	Asn	Met
1940						1945					1950			
Ser	Ala	Ala	Leu	Thr	Ala	Arg	Lys	Thr	Lys	Glu	Phe	Arg	Ser	Pro
1955						1960					1965			
Pro	Gln	Glu	Gln	Ile	Asn	Met	Leu	Leu	Asn	Phe	Lys	Asp	Asp	Lys
1970						1975					1980			
Ser	Glu	Cys	Pro	Cys	Pro	Glu	Glu	Ile	Arg	Asp	Gln	Leu	Leu	Asp
1985						1990					1995			
Phe	His	Glu	Asp	Leu	Met	Thr	His	Cys	Gly	Ile	Glu	Leu	Asp	Glu
2000						2005					2010			
Asp	Gly	Ser	Leu	Asp	Gly	Asn	Ser	Asp	Leu	Thr	Ile	Arg	Gly	Arg
2015						2020					2025			
Leu	Leu	Ser	Leu	Val	Glu	Lys	Val	Thr	Tyr	Leu	Lys	Lys	Lys	Gln
2030						2035					2040			
Thr	Glu	Lys	Pro	Val	Glu	Ser	Asp	Ser	Arg	Lys	Ser	Ser	Thr	Leu
2045						2050					2055			
Gln	Gln	Leu	Ile	Ser	Glu	Thr	Met	Val	Arg	Trp	Ala	Gln	Glu	Ser
2060						2065					2070			
Val	Ile	Glu	Asp	Pro	Glu	Leu	Val	Arg	Ala	Met	Phe	Val	Leu	Leu
2075						2080					2085			
His	Arg	Gln	Tyr	Asp	Gly	Ile	Gly	Gly	Leu	Val	Arg	Ala	Leu	Pro
2090						2095					2100			

Lys	Thr	Tyr	Thr	Ile	Asn	Gly	Val	Ser	Val	Glu	Asp	Thr	Ile	Asn
2105						2110					2115			
Leu	Leu	Ala	Ser	Leu	Gly	Gln	Ile	Arg	Ser	Leu	Leu	Ser	Val	Arg
2120						2125					2130			
Met	Gly	Lys	Glu	Glu	Glu	Lys	Leu	Met	Ile	Arg	Gly	Leu	Gly	Asp
2135						2140					2145			
Ile	Met	Asn	Asn	Lys	Val	Phe	Tyr	Gln	His	Pro	Asn	Leu	Met	Arg
2150						2155					2160			
Ala	Leu	Gly	Met	His	Glu	Thr	Val	Met	Glu	Val	Met	Val	Asn	Val
2165						2170					2175			
Leu	Gly	Gly	Gly	Glu	Ser	Lys	Glu	Ile	Thr	Phe	Pro	Lys	Met	Val
2180						2185					2190			
Ala	Asn	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Ile	Ser	Arg
2195						2200					2205			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Leu	Ser	Tyr	Leu	Leu	Glu
2210						2215					2220			
Asn	Ser	Ser	Val	Gly	Leu	Ala	Ser	Pro	Ala	Met	Arg	Gly	Ser	Thr
2225						2230					2235			
Pro	Leu	Asp	Val	Ala	Ala	Ala	Ser	Val	Met	Asp	Asn	Asn	Glu	Leu
2240						2245					2250			
Ala	Leu	Ala	Leu	Arg	Glu	Pro	Asp	Leu	Glu	Lys	Val	Val	Arg	Tyr
2255						2260					2265			
Leu	Ala	Gly	Cys	Gly	Leu	Gln	Ser	Cys	Gln	Met	Leu	Val	Ser	Lys
2270						2275					2280			
Gly	Tyr	Pro	Asp	Ile	Gly	Trp	Asn	Pro	Val	Glu	Gly	Glu	Arg	Tyr
2285						2290					2295			
Leu	Asp	Phe	Leu	Arg	Phe	Ala	Val	Phe	Cys	Asn	Gly	Glu	Ser	Val
2300						2305					2310			
Glu	Glu	Asn	Ala	Asn	Val	Val	Val	Arg	Leu	Leu	Ile	Arg	Arg	Pro
2315						2320					2325			
Glu	Cys	Phe	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Gly	Asn	Gly	Leu
2330						2335					2340			
Leu	Ala	Ala	Met	Glu	Glu	Ala	Ile	Lys	Ile	Ala	Glu	Asp	Pro	Ser
2345						2350					2355			
Arg	Asp	Gly	Pro	Ser	Pro	Thr	Ser	Gly	Ser	Ser	Lys	Thr	Leu	Asp
2360						2365					2370			
Thr	Glu	Glu	Glu	Glu	Asp	Asp	Thr	Ile	His	Met	Gly	Asn	Ala	Ile
2375						2380					2385			
Met	Thr	Phe	Tyr	Ala	Ala	Leu	Ile	Asp	Leu	Leu	Gly	Arg	Cys	Ala
2390						2395					2400			

Pro	Glu	Met	His	Leu	Ile	His	Ala	Gly	Lys	Gly	Glu	Ala	Ile	Arg
2405						2410					2415			
Ile	Arg	Ser	Ile	Leu	Arg	Ser	Leu	Ile	Pro	Leu	Gly	Asp	Leu	Val
2420						2425					2430			
Gly	Val	Ile	Ser	Ile	Ala	Phe	Gln	Met	Pro	Thr	Ile	Ala	Lys	Asp
2435						2440					2445			
Gly	Asn	Val	Val	Glu	Pro	Asp	Met	Ser	Ala	Gly	Phe	Cys	Pro	Asp
2450						2455					2460			
His	Lys	Ala	Ala	Met	Val	Leu	Phe	Leu	Asp	Arg	Val	Tyr	Gly	Ile
2465						2470					2475			
Glu	Val	Gln	Asp	Phe	Leu	Leu	His	Leu	Leu	Glu	Val	Gly	Phe	Leu
2480						2485					2490			
Pro	Asp	Leu	Arg	Ala	Ala	Ala	Ser	Leu	Asp	Thr	Ala	Ala	Leu	Ser
2495						2500					2505			
Ala	Thr	Asp	Met	Ala	Leu	Ala	Leu	Asn	Arg	Tyr	Leu	Cys	Thr	Ala
2510						2515					2520			
Val	Leu	Pro	Leu	Leu	Thr	Arg	Cys	Ala	Pro	Leu	Phe	Ala	Gly	Thr
2525						2530					2535			
Glu	His	His	Ala	Ser	Leu	Ile	Asp	Ser	Leu	Leu	His	Thr	Val	Tyr
2540						2545					2550			
Arg	Leu	Ser	Lys	Gly	Cys	Ser	Leu	Thr	Lys	Ala	Gln	Arg	Asp	Ser
2555						2560					2565			
Ile	Glu	Val	Cys	Leu	Leu	Ser	Ile	Cys	Gly	Gln	Leu	Arg	Pro	Ser
2570						2575					2580			
Met	Met	Gln	His	Leu	Leu	Arg	Arg	Leu	Val	Phe	Asp	Val	Pro	Leu
2585						2590					2595			
Leu	Asn	Glu	His	Ala	Lys	Met	Pro	Leu	Lys	Leu	Leu	Thr	Asn	His
2600						2605					2610			
Tyr	Glu	Arg	Cys	Trp	Lys	Tyr	Tyr	Cys	Leu	Pro	Gly	Gly	Trp	Gly
2615						2620					2625			
Asn	Phe	Gly	Ala	Ala	Ser	Glu	Glu	Glu	Leu	His	Leu	Ser	Arg	Lys
2630						2635					2640			
Leu	Phe	Trp	Gly	Ile	Phe	Asp	Ala	Leu	Ser	Gln	Lys	Lys	Tyr	Glu
2645						2650					2655			
Gln	Glu	Leu	Phe	Lys	Leu	Ala	Leu	Pro	Cys	Leu	Ser	Ala	Val	Ala
2660						2665					2670			
Gly	Ala	Leu	Pro	Pro	Asp	Tyr	Met	Glu	Ser	Asn	Tyr	Val	Ser	Met
2675						2680					2685			
Met	Glu	Lys	Gln	Ser	Ser	Met	Asp	Ser	Glu	Gly	Asn	Phe	Asn	Pro
2690						2695					2700			

Gln	Pro	Val	Asp	Thr	Ser	Asn	Ile	Ile	Ile	Pro	Glu	Lys	Leu	Glu
	2705					2710					2715			
Tyr	Phe	Ile	Asn	Lys	Tyr	Ala	Glu	His	Ser	His	Asp	Lys	Trp	Ser
	2720					2725					2730			
Met	Asp	Lys	Leu	Ala	Asn	Gly	Trp	Ile	Tyr	Gly	Glu	Ile	Tyr	Ser
	2735					2740					2745			
Asp	Ser	Ser	Lys	Ile	Gln	Pro	Leu	Met	Lys	Pro	Tyr	Lys	Leu	Leu
	2750					2755					2760			
Ser	Glu	Lys	Glu	Lys	Glu	Ile	Tyr	Arg	Trp	Pro	Ile	Lys	Glu	Ser
	2765					2770					2775			
Leu	Lys	Thr	Met	Leu	Ala	Trp	Gly	Trp	Arg	Ile	Glu	Arg	Thr	Arg
	2780					2785					2790			
Glu	Gly	Asp	Ser	Met	Ala	Leu	Tyr	Asn	Arg	Thr	Arg	Arg	Ile	Ser
	2795					2800					2805			
Gln	Thr	Ser	Gln	Val	Ser	Val	Asp	Ala	Ala	His	Gly	Tyr	Ser	Pro
	2810					2815					2820			
Arg	Ala	Ile	Asp	Met	Ser	Asn	Val	Thr	Leu	Ser	Arg	Asp	Leu	His
	2825					2830					2835			
Ala	Met	Ala	Glu	Met	Met	Ala	Glu	Asn	Tyr	His	Asn	Ile	Trp	Ala
	2840					2845					2850			
Lys	Lys	Lys	Lys	Leu	Glu	Leu	Glu	Ser	Lys	Gly	Gly	Gly	Asn	His
	2855					2860					2865			
Pro	Leu	Leu	Val	Pro	Tyr	Asp	Thr	Leu	Thr	Ala	Lys	Glu	Lys	Ala
	2870					2875					2880			
Lys	Asp	Arg	Glu	Lys	Ala	Gln	Asp	Ile	Leu	Lys	Phe	Leu	Gln	Ile
	2885					2890					2895			
Asn	Gly	Tyr	Ala	Val	Ser	Arg	Gly	Phe	Lys	Asp	Leu	Glu	Leu	Asp
	2900					2905					2910			
Thr	Pro	Ser	Ile	Glu	Lys	Arg	Phe	Ala	Tyr	Ser	Phe	Leu	Gln	Gln
	2915					2920					2925			
Leu	Ile	Arg	Tyr	Val	Asp	Glu	Ala	His	Gln	Tyr	Ile	Leu	Glu	Phe
	2930					2935					2940			
Asp	Gly	Gly	Ser	Arg	Ser	Lys	Gly	Glu	His	Phe	Pro	Tyr	Glu	Gln
	2945					2950					2955			
Glu	Ile	Lys	Phe	Phe	Ala	Lys	Val	Val	Leu	Pro	Leu	Ile	Asp	Gln
	2960					2965					2970			
Tyr	Phe	Lys	Asn	His	Arg	Leu	Tyr	Phe	Leu	Ser	Ala	Ala	Ser	Arg
	2975					2980					2985			
Pro	Leu	Cys	Ser	Gly	Gly	His	Ala	Ser	Asn	Lys	Glu	Lys	Glu	Met
	2990					2995					3000			

Val	Thr	Ser	Leu	Phe	Cys	Lys	Leu	Gly	Val	Leu	Val	Arg	His	Arg
3005						3010					3015			
Ile	Ser	Leu	Phe	Gly	Asn	Asp	Ala	Thr	Ser	Ile	Val	Asn	Cys	Leu
3020						3025					3030			
His	Ile	Leu	Gly	Gln	Thr	Leu	Asp	Ala	Arg	Thr	Val	Met	Lys	Thr
3035						3040					3045			
Gly	Leu	Glu	Ser	Val	Lys	Ser	Ala	Leu	Arg	Ala	Phe	Leu	Asp	Asn
3050						3055					3060			
Ala	Ala	Glu	Asp	Leu	Glu	Lys	Thr	Met	Glu	Asn	Leu	Lys	Gln	Gly
3065						3070					3075			
Gln	Phe	Thr	His	Thr	Arg	Asn	Gln	Pro	Arg	Gly	Val	Thr	Gln	Ile
3080						3085					3090			
Ile	Asn	Tyr	Thr	Thr	Val	Ala	Leu	Leu	Pro	Met	Leu	Ser	Ser	Leu
3095						3100					3105			
Phe	Glu	His	Ile	Gly	Gln	His	Gln	Phe	Gly	Glu	Asp	Leu	Ile	Leu
3110						3115					3120			
Glu	Asp	Val	Gln	Val	Ser	Cys	Tyr	Arg	Ile	Leu	Thr	Ser	Leu	Tyr
3125						3130					3135			
Ala	Leu	Gly	Thr	Ser	Lys	Ser	Ile	Tyr	Val	Glu	Arg	Gln	Arg	Ser
3140						3145					3150			
Ala	Leu	Gly	Glu	Cys	Leu	Ala	Ala	Phe	Ala	Gly	Ala	Phe	Pro	Val
3155						3160					3165			
Ala	Phe	Leu	Glu	Thr	His	Leu	Asn	Lys	His	Asn	Ile	Tyr	Ser	Ile
3170						3175					3180			
Tyr	Asn	Thr	Lys	Ser	Ser	Arg	Glu	Arg	Ala	Ala	Leu	Ser	Leu	Pro
3185						3190					3195			
Ala	Asn	Val	Glu	Asp	Val	Cys	Pro	Asn	Ile	Pro	Ser	Leu	Glu	Lys
3200						3205					3210			
Leu	Met	Glu	Glu	Ile	Val	Glu	Leu	Ala	Glu	Ser	Gly	Ile	Arg	Tyr
3215						3220					3225			
Thr	Gln	Met	Pro	His	Val	Met	Glu	Val	Ile	Leu	Pro	Met	Leu	Cys
3230						3235					3240			
Ser	Tyr	Met	Ser	Arg	Trp	Trp	Glu	His	Gly	Pro	Glu	Ser	Asn	Pro
3245						3250					3255			
Gly	Arg	Ala	Glu	Met	Cys	Cys	Thr	Ala	Leu	Asn	Ser	Glu	His	Met
3260						3265					3270			
Asn	Thr	Leu	Leu	Gly	Asn	Ile	Leu	Lys	Ile	Ile	Tyr	Asn	Asn	Leu
3275						3280					3285			
Gly	Ile	Asp	Glu	Gly	Ala	Trp	Met	Lys	Arg	Leu	Ala	Val	Phe	Ser
3290						3295					3300			

Gln	Pro	Ile	Ile	Asn	Lys	Val	Lys	Pro	Gln	Leu	Leu	Lys	Thr	His
3305						3310					3315			
Phe	Leu	Pro	Leu	Met	Glu	Lys	Leu	Lys	Lys	Lys	Ala	Ala	Met	Val
3320						3325					3330			
Val	Ser	Glu	Glu	Asp	His	Leu	Lys	Ala	Glu	Ala	Arg	Gly	Asp	Met
3335						3340					3345			
Ser	Glu	Ala	Glu	Leu	Leu	Ile	Leu	Asp	Glu	Phe	Thr	Thr	Leu	Ala
3350						3355					3360			
Arg	Asp	Leu	Tyr	Ala	Phe	Tyr	Pro	Leu	Leu	Ile	Arg	Phe	Val	Asp
3365						3370					3375			
Tyr	Asn	Arg	Ala	Lys	Trp	Leu	Lys	Glu	Pro	Thr	Pro	Glu	Ala	Glu
3380						3385					3390			
Glu	Leu	Phe	Arg	Met	Val	Ala	Glu	Val	Phe	Ile	Tyr	Trp	Ser	Lys
3395						3400					3405			
Ser	His	Asn	Phe	Lys	Arg	Glu	Glu	Gln	Asn	Phe	Val	Val	Gln	Asn
3410						3415					3420			
Glu	Ile	Asn	Asn	Met	Ser	Phe	Leu	Ile	Thr	Asp	Thr	Lys	Ser	Lys
3425						3430					3435			
Met	Ser	Lys	Ala	Ala	Val	Ser	Asp	Gln	Glu	Arg	Lys	Lys	Met	Lys
3440						3445					3450			
Arg	Lys	Gly	Asp	Arg	Tyr	Ser	Met	Gln	Thr	Ser	Leu	Ile	Val	Ala
3455						3460					3465			
Ala	Leu	Lys	Arg	Leu	Leu	Pro	Ile	Gly	Leu	Asn	Ile	Cys	Ala	Pro
3470						3475					3480			
Gly	Asp	Gln	Glu	Leu	Ile	Ala	Leu	Ala	Lys	Asn	Arg	Phe	Ser	Leu
3485						3490					3495			
Lys	Asp	Thr	Glu	Asp	Glu	Val	Arg	Asp	Ile	Ile	Arg	Asn	Asn	Ile
3500						3505					3510			
His	Leu	Gln	Gly	Lys	Leu	Glu	Asp	Pro	Ala	Ile	Arg	Trp	Gln	Met
3515						3520					3525			
Ala	Leu	Tyr	Lys	Asp	Leu	Pro	Asn	Arg	Thr	Glu	Glu	Thr	Ser	Asp
3530						3535					3540			
Pro	Glu	Lys	Thr	Val	Glu	Arg	Val	Leu	Asp	Ile	Ala	Asn	Val	Leu
3545						3550					3555			
Phe	His	Leu	Glu	Gln	Lys	Ser	Lys	Phe	Ile	Gly	Arg	Arg	Tyr	Tyr
3560						3565					3570			
Asn	Leu	Val	Glu	His	Pro	Gln	Arg	Ser	Lys	Lys	Ala	Val	Trp	His
3575						3580					3585			
Lys	Leu	Leu	Ser	Lys	Gln	Arg	Lys	Arg	Ala	Val	Val	Ala	Cys	Phe
3590						3595					3600			



Arg	Met	Ala	Pro	Leu	Tyr	Asn	Leu	Pro	Arg	His	Arg	Ala	Val	Asn
	3605					3610					3615			
Leu	Phe	Leu	Gln	Gly	Tyr	Glu	Lys	Ser	Trp	Ile	Glu	Thr	Glu	Glu
	3620					3625					3630			
His	Tyr	Phe	Glu	Asp	Lys	Leu	Ile	Glu	Asp	Leu	Ala	Lys	Pro	Gly
	3635					3640					3645			
Ala	Glu	Pro	Pro	Glu	Glu	Asp	Glu	Val	Thr	Lys	Arg	Val	Asp	Pro
	3650					3655					3660			
Leu	His	Gln	Leu	Ile	Leu	Leu	Phe	Ser	Arg	Thr	Ala	Leu	Thr	Glu
	3665					3670					3675			
Lys	Cys	Lys	Leu	Glu	Glu	Asp	Phe	Leu	Tyr	Met	Ala	Tyr	Ala	Asp
	3680					3685					3690			
Ile	Met	Ala	Lys	Ser	Cys	His	Asp	Glu	Glu	Asp	Asp	Asp	Gly	Glu
	3695					3700					3705			
Glu	Glu	Val	Lys	Ser	Phe	Glu	Glu	Lys	Glu	Met	Glu	Lys	Gln	Lys
	3710					3715					3720			
Leu	Leu	Tyr	Gln	Gln	Ala	Arg	Leu	His	Asp	Arg	Gly	Ala	Ala	Glu
	3725					3730					3735			
Met	Val	Leu	Gln	Thr	Ile	Ser	Ala	Ser	Lys	Gly	Glu	Thr	Gly	Pro
	3740					3745					3750			
Met	Val	Ala	Ala	Thr	Leu	Lys	Leu	Gly	Ile	Ala	Ile	Leu	Asn	Gly
	3755					3760					3765			
Gly	Asn	Ser	Thr	Val	Gln	Gln	Lys	Met	Leu	Asp	Tyr	Leu	Lys	Glu
	3770					3775					3780			
Lys	Lys	Asp	Val	Gly	Phe	Phe	Gln	Ser	Leu	Ala	Gly	Leu	Met	Gln
	3785					3790					3795			
Ser	Cys	Ser	Val	Leu	Asp	Leu	Asn	Ala	Phe	Glu	Arg	Gln	Asn	Lys
	3800					3805					3810			
Ala	Glu	Gly	Leu	Gly	Met	Val	Thr	Glu	Glu	Gly	Ser	Gly	Glu	Lys
	3815					3820					3825			
Val	Leu	Gln	Asp	Asp	Glu	Phe	Thr	Cys	Asp	Leu	Phe	Arg	Phe	Leu
	3830					3835					3840			
Gln	Leu	Leu	Cys	Glu	Gly	His	Asn	Ser	Asp	Phe	Gln	Asn	Tyr	Leu
	3845					3850					3855			
Arg	Thr	Gln	Thr	Gly	Asn	Asn	Thr	Thr	Val	Asn	Ile	Ile	Ile	Ser
	3860					3865					3870			
Thr	Val	Asp	Tyr	Leu	Leu	Arg	Val	Gln	Glu	Ser	Ile	Ser	Asp	Phe
	3875					3880					3885			
Tyr	Trp	Tyr	Tyr	Ser	Gly	Lys	Asp	Val	Ile	Asp	Glu	Gln	Gly	Gln
	3890					3895					3900			

Arg	Asn	Phe	Ser	Lys	Ala	Ile	Gln	Val	Ala	Lys	Gln	Val	Phe	Asn
3905						3910					3915			
Thr	Leu	Thr	Glu	Tyr	Ile	Gln	Gly	Pro	Cys	Thr	Gly	Asn	Gln	Gln
3920						3925					3930			
Ser	Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Val	Gly	Phe	Leu
3935						3940					3945			
His	Val	Phe	Ala	His	Met	Gln	Met	Lys	Leu	Ser	Gln	Asp	Ser	Ser
3950						3955					3960			
Gln	Ile	Glu	Leu	Leu	Lys	Glu	Leu	Met	Asp	Leu	Gln	Lys	Asp	Met
3965						3970					3975			
Val	Val	Met	Leu	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly
3980						3985					3990			
Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	Met	Leu	Val	Glu	Ser	Ser	Asn
3995						4000					4005			
Asn	Val	Glu	Met	Ile	Leu	Lys	Phe	Phe	Asp	Met	Phe	Leu	Lys	Leu
4010						4015					4020			
Lys	Asp	Leu	Thr	Ser	Ser	Asp	Thr	Phe	Lys	Glu	Tyr	Asp	Pro	Asp
4025						4030					4035			
Gly	Lys	Gly	Ile	Ile	Ser	Lys	Arg	Asp	Phe	His	Lys	Ala	Met	Glu
4040						4045					4050			
Ser	His	Lys	His	Tyr	Thr	Gln	Ser	Glu	Thr	Glu	Phe	Leu	Leu	Ser
4055						4060					4065			
Cys	Ala	Glu	Thr	Asp	Glu	Asn	Glu	Thr	Leu	Asp	Tyr	Glu	Glu	Phe
4070						4075					4080			
Val	Lys	Arg	Phe	His	Glu	Pro	Ala	Lys	Asp	Ile	Gly	Phe	Asn	Val
4085						4090					4095			
Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Thr
4100						4105					4110			
Arg	Leu	Gln	Thr	Phe	Leu	Glu	Leu	Ala	Glu	Ser	Val	Leu	Asn	Tyr
4115						4120					4125			
Phe	Gln	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Ser	Ala	Lys
4130						4135					4140			
Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Ser	Glu	Ser	Ser	Arg	Thr
4145						4150					4155			
Gln	Trp	Glu	Lys	Pro	Gln	Val	Lys	Glu	Ser	Lys	Arg	Gln	Phe	Ile
4160						4165					4170			
Phe	Asp	Val	Val	Asn	Glu	Gly	Gly	Glu	Lys	Glu	Lys	Met	Glu	Leu
4175						4180					4185			
Phe	Val	Asn	Phe	Cys	Glu	Asp	Thr	Ile	Phe	Glu	Met	Gln	Leu	Ala
4190						4195					4200			

Ala Gln	Ile Ser Glu Ser Asp	Leu Asn Glu Arg Ser	Ala Asn Lys
4205	4210	4215	
Glu Glu	Ser Glu Lys Glu Arg	Pro Glu Glu Gln Gly	Pro Lys Met
4220	4225	4230	
Gly Phe	Phe Ser Val Leu Thr	Val Arg Ser Ala Leu	Phe Ala Leu
4235	4240	4245	
Arg Tyr	Asn Ile Leu Thr Leu	Met Arg Met Leu Ser	Leu Lys Ser
4250	4255	4260	
Leu Lys	Lys Gln Met Lys Lys	Met Lys Lys Met Thr	Val Lys Asp
4265	4270	4275	
Met Val	Thr Ala Phe Phe Ser	Ser Tyr Trp Ser Ile	Phe Met Thr
4280	4285	4290	
Leu Leu	His Phe Val Ala Ser	Val Phe Arg Gly Phe	Phe Arg Ile
4295	4300	4305	
Val Cys	Ser Leu Leu Leu Gly	Gly Ser Leu Val Glu	Gly Ala Lys
4310	4315	4320	
Lys Ile	Lys Val Ala Glu Leu	Leu Ala Asn Met Pro	Asp Pro Thr
4325	4330	4335	
Gln Asp	Glu Val Arg Gly Asp	Gly Glu Glu Gly Glu	Arg Lys Pro
4340	4345	4350	
Met Glu	Thr Thr Leu Pro Ser	Glu Asp Leu Thr Asp	Leu Lys Glu
4355	4360	4365	
Leu Thr	Glu Glu Ser Asp Leu	Leu Ser Asp Ile Phe	Gly Leu Asp
4370	4375	4380	
Leu Lys	Arg Glu Gly Gly Gln	Tyr Lys Leu Ile Pro	His Asn Pro
4385	4390	4395	
Asn Ala	Gly Leu Ser Asp Leu	Met Ser Asn Pro Val	Leu Ile Pro
4400	4405	4410	
Glu Glu	Gln Glu Lys Phe Gln	Glu Gln Lys Thr Lys	Glu Glu Glu
4415	4420	4425	
Lys Glu	Glu Lys Glu Glu Thr	Lys Ser Glu Pro Glu	Lys Ala Glu
4430	4435	4440	
Gly Glu	Asp Gly Glu Lys Glu	Glu Lys Val Lys Glu	Asp Lys Gly
4445	4450	4455	
Lys Gln	Lys Leu Arg Gln Leu	His Thr His Arg Tyr	Gly Glu Pro
4460	4465	4470	
Glu Val	Pro Glu Ser Ala Phe	Trp Lys Lys Ile Ile	Ala Tyr Gln
4475	4480	4485	
Gln Lys	Leu Leu Asn Tyr Phe	Ala Arg Asn Phe Tyr	Asn Met Arg
4490	4495	4500	

Met	Leu	Ala	Leu	Phe	Val	Ala	Phe	Ala	Ile	Asn	Phe	Ile	Leu	Leu
4505						4510					4515			
Phe	Tyr	Lys	Val	Ser	Thr	Ser	Ser	Val	Val	Glu	Gly	Lys	Glu	Leu
4520						4525					4530			
Pro	Ser	Arg	Ser	Thr	Ser	Glu	Asn	Ala	Lys	Val	Thr	Thr	Ser	Leu
4535						4540					4545			
Asp	Ser	Ser	Ser	His	Arg	Ile	Ile	Ala	Val	His	Tyr	Val	Leu	Glu
4550						4555					4560			
Glu	Ser	Ser	Gly	Tyr	Met	Glu	Pro	Thr	Leu	Arg	Ile	Leu	Ala	Ile
4565						4570					4575			
Leu	His	Thr	Val	Ile	Ser	Phe	Phe	Cys	Ile	Ile	Gly	Tyr	Tyr	Cys
4580						4585					4590			
Leu	Lys	Val	Pro	Leu	Val	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Val	Ala
4595						4600					4605			
Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Thr	Glu	Gln	Pro	Ser
4610						4615					4620			
Glu	Asp	Asp	Ile	Lys	Gly	Gln	Trp	Asp	Arg	Leu	Val	Ile	Asn	Thr
4625						4630					4635			
Gln	Ser	Phe	Pro	Asn	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Arg	Lys
4640						4645					4650			
Val	Met	Asp	Lys	Tyr	Gly	Glu	Phe	Tyr	Gly	Arg	Asp	Arg	Ile	Ser
4655						4660					4665			
Glu	Leu	Leu	Gly	Met	Asp	Lys	Ala	Ala	Leu	Asp	Phe	Ser	Asp	Ala
4670						4675					4680			
Arg	Glu	Lys	Lys	Lys	Pro	Lys	Lys	Asp	Ser	Ser	Leu	Ser	Ala	Val
4685						4690					4695			
Leu	Asn	Ser	Ile	Asp	Val	Lys	Tyr	Gln	Met	Trp	Lys	Leu	Gly	Val
4700						4705					4710			
Val	Phe	Thr	Asp	Asn	Ser	Phe	Leu	Tyr	Leu	Ala	Trp	Tyr	Met	Thr
4715						4720					4725			
Met	Ser	Ile	Leu	Gly	His	Tyr	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His
4730						4735					4740			
Leu	Leu	Asp	Ile	Ala	Met	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu
4745						4750					4755			
Ser	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Gly
4760						4765					4770			
Leu	Leu	Ala	Val	Val	Val	Tyr	Leu	Tyr	Thr	Val	Val	Ala	Phe	Asn
4775						4780					4785			
Phe	Phe	Arg	Lys	Phe	Tyr	Asn	Lys	Ser	Glu	Asp	Gly	Asp	Thr	Pro
4790						4795					4800			

Asp	Met	Lys	Cys	Asp	Asp	Met	Leu	Thr	Cys	Tyr	Met	Phe	His	Met
4805						4810					4815			
Tyr	Val	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Ile	Glu
4820						4825					4830			
Asp	Pro	Ala	Gly	Asp	Glu	Tyr	Glu	Ile	Tyr	Arg	Ile	Ile	Phe	Asp
4835						4840					4845			
Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Val	Ile	Leu	Leu	Ala	Ile	Ile
4850						4855					4860			
Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Gln
4865						4870					4875			
Glu	Gln	Val	Lys	Glu	Asp	Met	Glu	Thr	Lys	Cys	Phe	Ile	Cys	Gly
4880						4885					4890			
Ile	Gly	Asn	Asp	Tyr	Phe	Asp	Thr	Val	Pro	His	Gly	Phe	Glu	Thr
4895						4900					4905			
His	Thr	Leu	Gln	Glu	His	Asn	Leu	Ala	Asn	Tyr	Leu	Phe	Phe	Leu
4910						4915					4920			
Met	Tyr	Leu	Ile	Asn	Lys	Asp	Glu	Thr	Glu	His	Thr	Gly	Gln	Glu
4925						4930					4935			
Ser	Tyr	Val	Trp	Lys	Met	Tyr	Gln	Glu	Arg	Cys	Trp	Glu	Phe	Phe
4940						4945					4950			
Pro	Ala	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Gln	Leu	Asn
4955						4960					4965			

<210> 62  
 <211> 4967  
 <212> PRT  
 <213> Homo sapiens

<400>	62														
Met	Ala	Asp	Gly	Gly	Glu	Gly	Glu	Asp	Glu	Ile	Gln	Phe	Leu	Arg	Thr
1			5						10					15	
Asp	Asp	Glu	Val	Val	Leu	Gln	Cys	Thr	Ala	Thr	Ile	His	Lys	Glu	Gln
		20						25					30		
Gln	Lys	Leu	Cys	Leu	Ala	Ala	Glu	Gly	Phe	Gly	Asn	Arg	Leu	Cys	Phe
		35					40					45			
Leu	Glu	Ser	Thr	Ser	Asn	Ser	Lys	Asn	Val	Pro	Pro	Asp	Leu	Ser	Ile
	50					55					60				
Cys	Thr	Phe	Val	Leu	Glu	Gln	Ser	Leu	Ser	Val	Arg	Ala	Leu	Gln	Glu
65					70					75				80	
Met	Leu	Ala	Asn	Thr	Val	Glu	Lys	Ser	Glu	Gly	Gln	Val	Asp	Val	Glu
			85						90					95	
Lys	Trp	Lys	Phe	Met	Met	Lys	Thr	Ala	Gln	Gly	Gly	Gly	His	Arg	Thr

100					105					110					
Leu	Leu	Tyr	Gly	His	Ala	Ile	Leu	Leu	Arg	His	Ser	Tyr	Ser	Gly	Met
		115					120					125			
Tyr	Leu	Cys	Cys	Leu	Ser	Thr	Ser	Arg	Ser	Ser	Thr	Asp	Lys	Leu	Ala
	130					135					140				
Phe	Asp	Val	Gly	Leu	Gln	Glu	Asp	Thr	Thr	Gly	Glu	Ala	Cys	Trp	Trp
145					150					155					160
Thr	Ile	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu	Gly	Glu	Lys	Val	Arg
				165					170					175	
Val	Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ser	Ser	Glu	Arg	Tyr	Leu
			180					185					190		
His	Leu	Ser	Tyr	Gly	Asn	Gly	Ser	Leu	His	Val	Asp	Ala	Ala	Phe	Gln
		195					200					205			
Gln	Thr	Leu	Trp	Ser	Val	Ala	Pro	Ile	Ser	Ser	Gly	Ser	Glu	Ala	Ala
	210					215					220				
Gln	Gly	Tyr	Leu	Ile	Gly	Gly	Asp	Val	Leu	Arg	Leu	Leu	His	Gly	His
225					230					235					240
Met	Asp	Glu	Cys	Leu	Thr	Val	Pro	Ser	Gly	Glu	His	Gly	Glu	Glu	Gln
				245					250					255	
Arg	Arg	Thr	Val	His	Tyr	Glu	Gly	Gly	Ala	Val	Ser	Val	His	Ala	Arg
			260					265					270		
Ser	Leu	Trp	Arg	Leu	Glu	Thr	Leu	Arg	Val	Ala	Trp	Ser	Gly	Ser	His
		275					280					285			
Ile	Arg	Trp	Gly	Gln	Pro	Phe	Arg	Leu	Arg	His	Val	Thr	Thr	Gly	Lys
	290					295					300				
Tyr	Leu	Ser	Leu	Met	Glu	Asp	Lys	Asn	Leu	Leu	Leu	Met	Asp	Lys	Glu
305					310					315					320
Lys	Ala	Asp	Val	Lys	Ser	Thr	Ala	Phe	Thr	Phe	Arg	Ser	Ser	Lys	Glu
				325					330					335	
Lys	Leu	Asp	Val	Gly	Val	Arg	Lys	Glu	Val	Asp	Gly	Met	Gly	Thr	Ser
			340					345					350		
Glu	Ile	Lys	Tyr	Gly	Asp	Ser	Val	Cys	Tyr	Ile	Gln	His	Val	Asp	Thr
		355					360					365			
Gly	Leu	Trp	Leu	Thr	Tyr	Gln	Ser	Val	Asp	Val	Lys	Ser	Val	Arg	Met
	370					375					380				
Gly	Ser	Ile	Gln	Arg	Lys	Ala	Ile	Met	His	His	Glu	Gly	His	Met	Asp
385					390					395					400
Asp	Gly	Ile	Ser	Leu	Ser	Arg	Ser	Gln	His	Glu	Glu	Ser	Arg	Thr	Ala
				405					410					415	
Arg	Val	Ile	Arg	Ser	Thr	Val	Phe	Leu	Phe	Asn	Arg	Phe	Ile	Arg	Gly

420					425					430					
Leu	Asp	Ala	Leu	Ser	Lys	Lys	Ala	Lys	Ala	Ser	Thr	Val	Asp	Leu	Pro
		435					440					445			
Ile	Glu	Ser	Val	Ser	Leu	Ser	Leu	Gln	Asp	Leu	Ile	Gly	Tyr	Phe	His
	450					455					460				
Pro	Pro	Asp	Glu	His	Leu	Glu	His	Glu	Asp	Lys	Gln	Asn	Arg	Leu	Arg
465					470					475					480
Ala	Leu	Lys	Asn	Arg	Gln	Asn	Leu	Phe	Gln	Glu	Glu	Gly	Met	Ile	Asn
			485						490					495	
Leu	Val	Leu	Glu	Cys	Ile	Asp	Arg	Leu	His	Val	Tyr	Ser	Ser	Ala	Ala
			500					505					510		
His	Phe	Ala	Asp	Val	Ala	Gly	Arg	Glu	Ala	Gly	Glu	Ser	Trp	Lys	Ser
	515						520					525			
Ile	Leu	Asn	Ser	Leu	Tyr	Glu	Leu	Leu	Ala	Ala	Leu	Ile	Arg	Gly	Asn
	530					535					540				
Arg	Lys	Asn	Cys	Ala	Gln	Phe	Ser	Gly	Ser	Leu	Asp	Trp	Leu	Ile	Ser
545					550					555					560
Arg	Leu	Glu	Arg	Leu	Glu	Ala	Ser	Ser	Gly	Ile	Leu	Glu	Val	Leu	His
				565					570					575	
Cys	Val	Leu	Val	Glu	Ser	Pro	Glu	Ala	Leu	Asn	Ile	Ile	Lys	Glu	Gly
			580					585					590		
His	Ile	Lys	Ser	Ile	Ile	Ser	Leu	Leu	Asp	Lys	His	Gly	Arg	Asn	His
	595					600					605				
Lys	Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Cys	His	Gly	Val	Ala
	610					615					620				
Val	Arg	Ser	Asn	Gln	His	Leu	Ile	Cys	Asp	Asn	Leu	Leu	Pro	Gly	Arg
625					630					635					640
Asp	Leu	Leu	Leu	Gln	Thr	Arg	Leu	Val	Asn	His	Val	Ser	Ser	Met	Arg
				645					650					655	
Pro	Asn	Ile	Phe	Leu	Gly	Val	Ser	Glu	Gly	Ser	Ala	Gln	Tyr	Lys	Lys
			660					665					670		
Trp	Tyr	Tyr	Glu	Leu	Met	Val	Asp	His	Thr	Glu	Pro	Phe	Val	Thr	Ala
	675						680					685			
Glu	Ala	Thr	His	Leu	Arg	Val	Gly	Trp	Ala	Ser	Thr	Glu	Gly	Tyr	Ser
	690					695					700				
Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Glu	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp
705					710					715					720
Asp	Leu	Phe	Ser	Tyr	Gly	Phe	Asp	Gly	Leu	His	Leu	Trp	Ser	Gly	Cys
			725					730						735	
Ile	Ala	Arg	Thr	Val	Ser	Ser	Pro	Asn	Gln	His	Leu	Leu	Arg	Thr	Asp

740					745					750						
Asp	Val	Ile	Ser	Cys	Cys	Leu	Asp	Leu	Ser	Ala	Pro	Ser	Ile	Ser	Phe	
755					760					765						
Arg	Ile	Asn	Gly	Gln	Pro	Val	Gln	Gly	Met	Phe	Glu	Asn	Phe	Asn	Ile	
770					775					780						
Asp	Gly	Leu	Phe	Phe	Pro	Val	Val	Ser	Phe	Ser	Ala	Gly	Ile	Lys	Val	
785					790					795					800	
Arg	Phe	Leu	Leu	Gly	Gly	Arg	His	Gly	Glu	Phe	Lys	Phe	Leu	Pro	Pro	
805					810					815						
Pro	Gly	Tyr	Ala	Pro	Cys	Tyr	Glu	Ala	Val	Leu	Pro	Lys	Glu	Lys	Leu	
820					825					830						
Lys	Val	Glu	His	Ser	Arg	Glu	Tyr	Lys	Gln	Glu	Arg	Thr	Tyr	Thr	Arg	
835					840					845						
Asp	Leu	Leu	Gly	Pro	Thr	Val	Ser	Leu	Thr	Gln	Ala	Ala	Phe	Thr	Pro	
850					855					860						
Ile	Pro	Val	Asp	Thr	Ser	Gln	Ile	Val	Leu	Pro	Pro	His	Leu	Glu	Arg	
865					870					875					880	
Ile	Arg	Glu	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	Leu	Trp	Val	Met	Asn	
885					890					895						
Lys	Ile	Glu	Leu	Gly	Trp	Gln	Tyr	Gly	Pro	Val	Arg	Asp	Asp	Asn	Lys	
900					905					910						
Arg	Gln	His	Pro	Cys	Leu	Val	Glu	Phe	Ser	Lys	Leu	Pro	Glu	Gln	Glu	
915					920					925						
Arg	Asn	Tyr	Asn	Leu	Gln	Met	Ser	Leu	Glu	Thr	Leu	Lys	Thr	Leu	Leu	
930					935					940						
Ala	Leu	Gly	Cys	His	Val	Gly	Ile	Ser	Asp	Glu	His	Ala	Glu	Asp	Lys	
945					950					955					960	
Val	Lys	Lys	Met	Lys	Leu	Pro	Lys	Asn	Tyr	Gln	Leu	Thr	Ser	Gly	Tyr	
965					970					975						
Lys	Pro	Ala	Pro	Met	Asp	Leu	Ser	Phe	Ile	Lys	Leu	Thr	Pro	Ser	Gln	
980					985					990						
Glu	Ala	Met	Val	Asp	Lys	Leu	Ala	Glu	Asn	Ala	His	Asn	Val	Trp	Ala	
995					1000					1005						
Arg	Asp	Arg	Ile	Arg	Gln	Gly	Trp	Thr	Tyr	Gly	Ile	Gln	Gln	Asp		
1010					1015					1020						
Val	Lys	Asn	Arg	Arg	Asn	Pro	Arg	Leu	Val	Pro	Tyr	Thr	Pro	Leu		
1025					1030					1035						
Asp	Asp	Arg	Thr	Lys	Lys	Ser	Asn	Lys	Asp	Ser	Leu	Arg	Glu	Ala		
1040					1045					1050						
Val	Arg	Thr	Leu	Leu	Gly	Tyr	Gly	Tyr	Asn	Leu	Glu	Ala	Pro	Asp		



1055				1060				1065						
Gln	Asp	His	Ala	Ala	Arg	Ala	Glu	Val	Cys	Ser	Gly	Thr	Gly	Glu
1070				1075							1080			
Arg	Phe	Arg	Ile	Phe	Arg	Ala	Glu	Lys	Thr	Tyr	Ala	Val	Lys	Ala
1085				1090							1095			
Gly	Arg	Trp	Tyr	Phe	Glu	Phe	Glu	Thr	Val	Thr	Ala	Gly	Asp	Met
1100				1105							1110			
Arg	Val	Gly	Trp	Ser	Arg	Pro	Gly	Cys	Gln	Pro	Asp	Gln	Glu	Leu
1115				1120							1125			
Gly	Ser	Asp	Glu	Arg	Ala	Phe	Ala	Phe	Asp	Gly	Phe	Lys	Ala	Gln
1130				1135							1140			
Arg	Trp	His	Gln	Gly	Asn	Glu	His	Tyr	Gly	Arg	Ser	Trp	Gln	Ala
1145				1150							1155			
Gly	Asp	Val	Val	Gly	Cys	Met	Val	Asp	Met	Asn	Glu	His	Thr	Met
1160				1165							1170			
Met	Phe	Thr	Leu	Asn	Gly	Glu	Ile	Leu	Leu	Asp	Asp	Ser	Gly	Ser
1175				1180							1185			
Glu	Leu	Ala	Phe	Lys	Asp	Phe	Asp	Val	Gly	Asp	Gly	Phe	Ile	Pro
1190				1195							1200			
Val	Cys	Ser	Leu	Gly	Val	Ala	Gln	Val	Gly	Arg	Met	Asn	Phe	Gly
1205				1210							1215			
Lys	Asp	Val	Ser	Thr	Leu	Lys	Tyr	Phe	Thr	Ile	Cys	Gly	Leu	Gln
1220				1225							1230			
Glu	Gly	Tyr	Glu	Pro	Phe	Ala	Val	Asn	Thr	Asn	Arg	Asp	Ile	Thr
1235				1240							1245			
Met	Trp	Leu	Ser	Lys	Arg	Leu	Pro	Gln	Phe	Leu	Gln	Val	Pro	Ser
1250				1255							1260			
Asn	His	Glu	His	Ile	Glu	Val	Thr	Arg	Ile	Asp	Gly	Thr	Ile	Asp
1265				1270							1275			
Ser	Ser	Pro	Cys	Leu	Lys	Val	Thr	Gln	Lys	Ser	Phe	Gly	Ser	Gln
1280				1285							1290			
Asn	Ser	Asn	Thr	Asp	Ile	Met	Phe	Tyr	Arg	Leu	Ser	Met	Pro	Ile
1295				1300							1305			
Glu	Cys	Ala	Glu	Val	Phe	Ser	Lys	Thr	Val	Ala	Gly	Gly	Leu	Pro
1310				1315							1320			
Gly	Ala	Gly	Leu	Phe	Gly	Pro	Lys	Asn	Asp	Leu	Glu	Asp	Tyr	Asp
1325				1330							1335			
Ala	Asp	Ser	Asp	Phe	Glu	Val	Leu	Met	Lys	Thr	Ala	His	Gly	His
1340				1345							1350			
Leu	Val	Pro	Asp	Arg	Val	Asp	Lys	Asp	Lys	Glu	Ala	Thr	Lys	Pro

1355					1360					1365				
Glu	Phe	Asn	Asn	His	Lys	Asp	Tyr	Ala	Gln	Glu	Lys	Pro	Ser	Arg
1370						1375					1380			
Leu	Lys	Gln	Arg	Phe	Leu	Leu	Arg	Arg	Thr	Lys	Pro	Asp	Tyr	Ser
1385						1390					1395			
Thr	Ser	His	Ser	Ala	Arg	Leu	Thr	Glu	Asp	Val	Leu	Ala	Asp	Asp
1400						1405					1410			
Arg	Asp	Asp	Tyr	Asp	Phe	Leu	Met	Gln	Thr	Ser	Thr	Tyr	Tyr	Tyr
1415						1420					1425			
Ser	Val	Arg	Ile	Phe	Pro	Gly	Gln	Glu	Pro	Ala	Asn	Val	Trp	Val
1430						1435					1440			
Gly	Trp	Ile	Thr	Ser	Asp	Phe	His	Gln	Tyr	Asp	Thr	Gly	Phe	Asp
1445						1450					1455			
Leu	Asp	Arg	Val	Arg	Thr	Val	Thr	Val	Thr	Leu	Gly	Asp	Glu	Lys
1460						1465					1470			
Gly	Lys	Val	His	Glu	Ser	Ile	Lys	Arg	Ser	Asn	Cys	Tyr	Met	Val
1475						1480					1485			
Cys	Ala	Gly	Glu	Ser	Met	Ser	Pro	Gly	Gln	Gly	Arg	Asn	Asn	Asn
1490						1495					1500			
Gly	Leu	Glu	Ile	Gly	Cys	Val	Val	Asp	Ala	Ala	Ser	Gly	Leu	Leu
1505						1510					1515			
Thr	Phe	Ile	Ala	Asn	Gly	Lys	Glu	Leu	Ser	Thr	Tyr	Tyr	Gln	Val
1520						1525					1530			
Glu	Pro	Ser	Thr	Lys	Leu	Phe	Pro	Ala	Val	Phe	Ala	Gln	Ala	Thr
1535						1540					1545			
Ser	Pro	Asn	Val	Phe	Gln	Phe	Glu	Leu	Gly	Arg	Ile	Lys	Asn	Val
1550						1555					1560			
Met	Pro	Leu	Ser	Ala	Gly	Leu	Phe	Lys	Ser	Glu	His	Lys	Asn	Pro
1565						1570					1575			
Val	Pro	Gln	Cys	Pro	Pro	Arg	Leu	His	Val	Gln	Phe	Leu	Ser	His
1580						1585					1590			
Val	Leu	Trp	Ser	Arg	Met	Pro	Asn	Gln	Phe	Leu	Lys	Val	Asp	Val
1595						1600					1605			
Ser	Arg	Ile	Ser	Glu	Arg	Gln	Gly	Trp	Leu	Val	Gln	Cys	Leu	Asp
1610						1615					1620			
Pro	Leu	Gln	Phe	Met	Ser	Leu	His	Ile	Pro	Glu	Glu	Asn	Arg	Ser
1625						1630					1635			
Val	Asp	Ile	Leu	Glu	Leu	Thr	Glu	Gln	Glu	Glu	Leu	Leu	Lys	Phe
1640						1645					1650			
His	Tyr	His	Thr	Leu	Arg	Leu	Tyr	Ser	Ala	Val	Cys	Ala	Leu	Gly

1655						1660						1665			
Asn His	Arg Val	Ala His	Ala	Leu Cys	Ser His	Val	Asp Glu	Pro							
1670			1675			1680									
Gln Leu	Leu Tyr	Ala Ile	Glu	Asn Lys	Tyr Met	Pro	Gly Leu	Leu							
1685			1690			1695									
Arg Ala	Gly Tyr	Tyr Asp	Leu	Leu Ile	Asp Ile	His	Leu Ser	Ser							
1700			1705			1710									
Tyr Ala	Thr Ala	Arg Leu	Met	Met Asn	Asn Glu	Tyr	Ile Val	Pro							
1715			1720			1725									
Met Thr	Glu Glu	Thr Lys	Ser	Ile Thr	Leu Phe	Pro	Asp Glu	Asn							
1730			1735			1740									
Lys Lys	His Gly	Leu Pro	Gly	Ile Gly	Leu Ser	Thr	Ser Leu	Arg							
1745			1750			1755									
Pro Arg	Met Gln	Phe Ser	Ser	Pro Ser	Phe Val	Ser	Ile Ser	Asn							
1760			1765			1770									
Glu Cys	Tyr Gln	Tyr Ser	Pro	Glu Phe	Pro Leu	Asp	Ile Leu	Lys							
1775			1780			1785									
Ser Lys	Thr Ile	Gln Met	Leu	Thr Glu	Ala Val	Lys	Glu Gly	Ser							
1790			1795			1800									
Leu His	Ala Arg	Asp Pro	Val	Gly Gly	Thr Thr	Glu	Phe Leu	Phe							
1805			1810			1815									
Val Pro	Leu Ile	Lys Leu	Phe	Tyr Thr	Leu Leu	Ile	Met Gly	Ile							
1820			1825			1830									
Phe His	Asn Glu	Asp Leu	Lys	His Ile	Leu Gln	Leu	Ile Glu	Pro							
1835			1840			1845									
Ser Val	Phe Lys	Glu Ala	Ala	Thr Pro	Glu Glu	Glu	Ser Asp	Thr							
1850			1855			1860									
Leu Glu	Lys Glu	Leu Ser	Val	Asp Asp	Ala Lys	Leu	Gln Gly	Ala							
1865			1870			1875									
Gly Glu	Glu Glu	Ala Lys	Gly	Gly Lys	Arg Pro	Lys	Glu Gly	Leu							
1880			1885			1890									
Leu Gln	Met Lys	Leu Pro	Glu	Pro Val	Lys Leu	Gln	Met Cys	Leu							
1895			1900			1905									
Leu Leu	Gln Tyr	Leu Cys	Asp	Cys Gln	Val Arg	His	Arg Ile	Glu							
1910			1915			1920									
Ala Ile	Val Ala	Phe Ser	Asp	Asp Phe	Val Ala	Lys	Leu Gln	Asp							
1925			1930			1935									
Asn Gln	Arg Phe	Arg Tyr	Asn	Glu Val	Met Gln	Ala	Leu Asn	Met							
1940			1945			1950									
Ser Ala	Ala Leu	Thr Ala	Arg	Lys Thr	Lys Glu	Phe	Arg Ser	Pro							

1955					1960					1965				
Pro	Gln	Glu	Gln	Ile	Asn	Met	Leu	Leu	Asn	Phe	Lys	Asp	Asp	Lys
1970						1975					1980			
Ser	Glu	Cys	Pro	Cys	Pro	Glu	Glu	Ile	Arg	Asp	Gln	Leu	Leu	Asp
1985						1990					1995			
Phe	His	Glu	Asp	Leu	Met	Thr	His	Cys	Gly	Ile	Glu	Leu	Asp	Glu
2000						2005					2010			
Asp	Gly	Ser	Leu	Asp	Gly	Asn	Ser	Asp	Leu	Thr	Ile	Arg	Gly	Arg
2015						2020					2025			
Leu	Leu	Ser	Leu	Val	Glu	Lys	Val	Thr	Tyr	Leu	Lys	Lys	Lys	Gln
2030						2035					2040			
Ala	Glu	Lys	Pro	Val	Glu	Ser	Asp	Ser	Lys	Lys	Ser	Ser	Thr	Leu
2045						2050					2055			
Gln	Gln	Leu	Ile	Ser	Glu	Thr	Met	Val	Arg	Trp	Ala	Gln	Glu	Ser
2060						2065					2070			
Val	Ile	Glu	Asp	Pro	Glu	Leu	Val	Arg	Ala	Met	Phe	Val	Leu	Leu
2075						2080					2085			
His	Arg	Gln	Tyr	Asp	Gly	Ile	Gly	Gly	Leu	Val	Arg	Ala	Leu	Pro
2090						2095					2100			
Lys	Thr	Tyr	Thr	Ile	Asn	Gly	Val	Ser	Val	Glu	Asp	Thr	Ile	Asn
2105						2110					2115			
Leu	Leu	Ala	Ser	Leu	Gly	Gln	Ile	Arg	Ser	Leu	Leu	Ser	Val	Arg
2120						2125					2130			
Met	Gly	Lys	Glu	Glu	Glu	Lys	Leu	Met	Ile	Arg	Gly	Leu	Gly	Asp
2135						2140					2145			
Ile	Met	Asn	Asn	Lys	Val	Phe	Tyr	Gln	His	Pro	Asn	Leu	Met	Arg
2150						2155					2160			
Ala	Leu	Gly	Met	His	Glu	Thr	Val	Met	Glu	Val	Met	Val	Asn	Val
2165						2170					2175			
Leu	Gly	Gly	Gly	Glu	Ser	Lys	Glu	Ile	Thr	Phe	Pro	Lys	Met	Val
2180						2185					2190			
Ala	Asn	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Ile	Ser	Arg
2195						2200					2205			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Leu	Ser	Tyr	Leu	Leu	Glu
2210						2215					2220			
Asn	Ser	Ser	Val	Gly	Leu	Ala	Ser	Pro	Ala	Met	Arg	Gly	Ser	Thr
2225						2230					2235			
Pro	Leu	Asp	Val	Ala	Ala	Ala	Ser	Val	Met	Asp	Asn	Asn	Glu	Leu
2240						2245					2250			
Ala	Leu	Ala	Leu	Arg	Glu	Pro	Asp	Leu	Glu	Lys	Val	Val	Arg	Tyr

2255		2260		2265
Leu Ala Gly Cys Gly Leu Gln Ser Cys Gln Met Leu Val Ser Lys				
2270		2275		2280
Gly Tyr Pro Asp Ile Gly Trp Asn Pro Val Glu Gly Glu Arg Tyr				
2285		2290		2295
Leu Asp Phe Leu Arg Phe Ala Val Phe Cys Asn Gly Glu Ser Val				
2300		2305		2310
Glu Glu Asn Ala Asn Val Val Val Arg Leu Leu Ile Arg Arg Pro				
2315		2320		2325
Glu Cys Phe Gly Pro Ala Leu Arg Gly Glu Gly Gly Asn Gly Leu				
2330		2335		2340
Leu Ala Ala Met Glu Glu Ala Ile Lys Ile Ala Glu Asp Pro Ser				
2345		2350		2355
Arg Asp Gly Pro Ser Pro Asn Ser Gly Ser Ser Lys Thr Leu Asp				
2360		2365		2370
Thr Glu Glu Glu Glu Asp Asp Thr Ile His Met Gly Asn Ala Ile				
2375		2380		2385
Met Thr Phe Tyr Ser Ala Leu Ile Asp Leu Leu Gly Arg Cys Ala				
2390		2395		2400
Pro Glu Met His Leu Ile His Ala Gly Lys Gly Glu Ala Ile Arg				
2405		2410		2415
Ile Arg Ser Ile Leu Arg Ser Leu Ile Pro Leu Gly Asp Leu Val				
2420		2425		2430
Gly Val Ile Ser Ile Ala Phe Gln Met Pro Thr Ile Ala Lys Asp				
2435		2440		2445
Gly Asn Val Val Glu Pro Asp Met Ser Ala Gly Phe Cys Pro Asp				
2450		2455		2460
His Lys Ala Ala Met Val Leu Phe Leu Asp Arg Val Tyr Gly Ile				
2465		2470		2475
Glu Val Gln Asp Phe Leu Leu His Leu Leu Glu Val Gly Phe Leu				
2480		2485		2490
Pro Asp Leu Arg Ala Ala Ala Ser Leu Asp Thr Ala Ala Leu Ser				
2495		2500		2505
Ala Thr Asp Met Ala Leu Ala Leu Asn Arg Tyr Leu Cys Thr Ala				
2510		2515		2520
Val Leu Pro Leu Leu Thr Arg Cys Ala Pro Leu Phe Ala Gly Thr				
2525		2530		2535
Glu His His Ala Ser Leu Ile Asp Ser Leu Leu His Thr Val Tyr				
2540		2545		2550
Arg Leu Ser Lys Gly Cys Ser Leu Thr Lys Ala Gln Arg Asp Ser				

2555						2560				2565				
Ile	Glu	Val	Cys	Leu	Leu	Ser	Ile	Cys	Gly	Gln	Leu	Arg	Pro	Ser
2570						2575					2580			
Met	Met	Gln	His	Leu	Leu	Arg	Arg	Leu	Val	Phe	Asp	Val	Pro	Leu
2585						2590					2595			
Leu	Asn	Glu	His	Ala	Lys	Met	Pro	Leu	Lys	Leu	Leu	Thr	Asn	His
2600						2605					2610			
Tyr	Glu	Arg	Cys	Trp	Lys	Tyr	Tyr	Cys	Leu	Pro	Gly	Gly	Trp	Gly
2615						2620					2625			
Asn	Phe	Gly	Ala	Ala	Ser	Glu	Glu	Glu	Leu	His	Leu	Ser	Arg	Lys
2630						2635					2640			
Leu	Phe	Trp	Gly	Ile	Phe	Asp	Ala	Leu	Ser	Gln	Lys	Lys	Tyr	Glu
2645						2650					2655			
Gln	Glu	Leu	Phe	Lys	Leu	Ala	Leu	Pro	Cys	Leu	Ser	Ala	Val	Ala
2660						2665					2670			
Gly	Ala	Leu	Pro	Pro	Asp	Tyr	Met	Glu	Ser	Asn	Tyr	Val	Ser	Met
2675						2680					2685			
Met	Glu	Lys	Gln	Ser	Ser	Met	Asp	Ser	Glu	Gly	Asn	Phe	Asn	Pro
2690						2695					2700			
Gln	Pro	Val	Asp	Thr	Ser	Asn	Ile	Thr	Ile	Pro	Glu	Lys	Leu	Glu
2705						2710					2715			
Tyr	Phe	Ile	Asn	Lys	Tyr	Ala	Glu	His	Ser	His	Asp	Lys	Trp	Ser
2720						2725					2730			
Met	Asp	Lys	Leu	Ala	Asn	Gly	Trp	Ile	Tyr	Gly	Glu	Ile	Tyr	Ser
2735						2740					2745			
Asp	Ser	Ser	Lys	Val	Gln	Pro	Leu	Met	Lys	Pro	Tyr	Lys	Leu	Leu
2750						2755					2760			
Ser	Glu	Lys	Glu	Lys	Glu	Ile	Tyr	Arg	Trp	Pro	Ile	Lys	Glu	Ser
2765						2770					2775			
Leu	Lys	Thr	Met	Leu	Ala	Arg	Thr	Met	Arg	Thr	Glu	Arg	Thr	Arg
2780						2785					2790			
Glu	Gly	Asp	Ser	Met	Ala	Leu	Tyr	Asn	Arg	Thr	Arg	Arg	Ile	Ser
2795						2800					2805			
Gln	Thr	Ser	Gln	Val	Ser	Val	Asp	Ala	Ala	His	Gly	Tyr	Ser	Pro
2810						2815					2820			
Arg	Ala	Ile	Asp	Met	Ser	Asn	Val	Thr	Leu	Ser	Arg	Asp	Leu	His
2825						2830					2835			
Ala	Met	Ala	Glu	Met	Met	Ala	Glu	Asn	Tyr	His	Asn	Ile	Trp	Ala
2840						2845					2850			
Lys	Lys	Lys	Lys	Met	Glu	Leu	Glu	Ser	Lys	Gly	Gly	Gly	Asn	His

2855		2860		2865	
Pro Leu Leu Val Pro Tyr Asp Thr Leu Thr Ala Lys Glu Lys Ala					
2870		2875		2880	
Lys Asp Arg Glu Lys Ala Gln Asp Ile Leu Lys Phe Leu Gln Ile					
2885		2890		2895	
Asn Gly Tyr Ala Val Ser Arg Gly Phe Lys Asp Leu Glu Leu Asp					
2900		2905		2910	
Thr Pro Ser Ile Glu Lys Arg Phe Ala Tyr Ser Phe Leu Gln Gln					
2915		2920		2925	
Leu Ile Arg Tyr Val Asp Glu Ala His Gln Tyr Ile Leu Glu Phe					
2930		2935		2940	
Asp Gly Gly Ser Arg Gly Lys Gly Glu His Phe Pro Tyr Glu Gln					
2945		2950		2955	
Glu Ile Lys Phe Phe Ala Lys Val Val Leu Pro Leu Ile Asp Gln					
2960		2965		2970	
Tyr Phe Lys Asn His Arg Leu Tyr Phe Leu Ser Ala Ala Ser Arg					
2975		2980		2985	
Pro Leu Cys Ser Gly Gly His Ala Ser Asn Lys Glu Lys Glu Met					
2990		2995		3000	
Val Thr Ser Leu Phe Cys Lys Leu Gly Val Leu Val Arg His Arg					
3005		3010		3015	
Ile Ser Leu Phe Gly Asn Asp Ala Thr Ser Ile Val Asn Cys Leu					
3020		3025		3030	
His Ile Leu Gly Gln Thr Leu Asp Ala Arg Thr Val Met Lys Thr					
3035		3040		3045	
Gly Leu Glu Ser Val Lys Ser Ala Leu Arg Ala Phe Leu Asp Asn					
3050		3055		3060	
Ala Ala Glu Asp Leu Glu Lys Thr Met Glu Asn Leu Lys Gln Gly					
3065		3070		3075	
Gln Phe Thr His Thr Arg Asn Gln Pro Lys Gly Val Thr Gln Ile					
3080		3085		3090	
Ile Asn Tyr Thr Thr Val Ala Leu Leu Pro Met Leu Ser Ser Leu					
3095		3100		3105	
Phe Glu His Ile Gly Gln His Gln Phe Gly Glu Asp Leu Ile Leu					
3110		3115		3120	
Glu Asp Val Gln Val Ser Cys Tyr Arg Ile Leu Thr Ser Leu Tyr					
3125		3130		3135	
Ala Leu Gly Thr Ser Lys Ser Ile Tyr Val Glu Arg Gln Arg Ser					
3140		3145		3150	
Ala Leu Gly Glu Cys Leu Ala Ala Phe Ala Gly Ala Phe Pro Val					

3155		3160		3165
Ala Phe Leu Glu Thr His	Leu Asp Lys His Asn Ile	Tyr Ser Ile		
3170	3175	3180		
Tyr Asn Thr Lys Ser Ser	Arg Glu Arg Ala Ala Leu	Ser Leu Pro		
3185	3190	3195		
Thr Asn Val Glu Asp Val	Cys Pro Asn Ile Pro Ser	Leu Glu Lys		
3200	3205	3210		
Leu Met Glu Glu Ile Val	Glu Leu Ala Glu Ser Gly	Ile Arg Tyr		
3215	3220	3225		
Thr Gln Met Pro His Val	Met Glu Val Ile Leu Pro	Met Leu Cys		
3230	3235	3240		
Ser Tyr Met Ser Arg Trp	Trp Glu His Gly Pro Glu	Asn Asn Pro		
3245	3250	3255		
Glu Arg Ala Glu Met Cys	Cys Thr Ala Leu Asn Ser	Glu His Met		
3260	3265	3270		
Asn Thr Leu Leu Gly Asn	Ile Leu Lys Ile Ile Tyr	Asn Asn Leu		
3275	3280	3285		
Gly Ile Asp Glu Gly Ala	Trp Met Lys Arg Leu Ala	Val Phe Ser		
3290	3295	3300		
Gln Pro Ile Ile Asn Lys	Val Lys Pro Gln Leu Leu	Lys Thr His		
3305	3310	3315		
Phe Leu Pro Leu Met Glu	Lys Leu Lys Lys Lys Ala	Ala Thr Val		
3320	3325	3330		
Val Ser Glu Glu Asp His	Leu Lys Ala Glu Ala Arg	Gly Asp Met		
3335	3340	3345		
Ser Glu Ala Glu Leu Leu	Ile Leu Asp Glu Phe Thr	Thr Leu Ala		
3350	3355	3360		
Arg Asp Leu Tyr Ala Phe	Tyr Pro Leu Leu Ile Arg	Phe Val Asp		
3365	3370	3375		
Tyr Asn Arg Ala Lys Trp	Leu Lys Glu Pro Asn Pro	Glu Ala Glu		
3380	3385	3390		
Glu Leu Phe Arg Met Val	Ala Glu Val Phe Ile Tyr	Trp Ser Lys		
3395	3400	3405		
Ser His Asn Phe Lys Arg	Glu Glu Gln Asn Phe Val	Val Gln Asn		
3410	3415	3420		
Glu Ile Asn Asn Met Ser	Phe Leu Ile Thr Asp Thr	Lys Ser Lys		
3425	3430	3435		
Met Ser Lys Ala Ala Val	Ser Asp Gln Glu Arg Lys	Lys Met Lys		
3440	3445	3450		
Arg Lys Gly Asp Arg Tyr	Ser Met Gln Thr Ser Leu	Ile Val Ala		



3455		3460		3465
Ala Leu Lys Arg Leu Leu Pro Ile Gly Leu Asn Ile Cys Ala Pro				
3470		3475		3480
Gly Asp Gln Glu Leu Ile Ala Leu Ala Lys Asn Arg Phe Ser Leu				
3485		3490		3495
Lys Asp Thr Glu Asp Glu Val Arg Asp Ile Ile Arg Ser Asn Ile				
3500		3505		3510
His Leu Gln Gly Lys Leu Glu Asp Pro Ala Ile Arg Trp Gln Met				
3515		3520		3525
Ala Leu Tyr Lys Asp Leu Pro Asn Arg Thr Asp Asp Thr Ser Asp				
3530		3535		3540
Pro Glu Lys Thr Val Glu Arg Val Leu Asp Ile Ala Asn Val Leu				
3545		3550		3555
Phe His Leu Glu Gln Lys Ser Lys Arg Val Gly Arg Arg His Tyr				
3560		3565		3570
Cys Leu Val Glu His Pro Gln Arg Ser Lys Lys Ala Val Trp His				
3575		3580		3585
Lys Leu Leu Ser Lys Gln Arg Lys Arg Ala Val Val Ala Cys Phe				
3590		3595		3600
Arg Met Ala Pro Leu Tyr Asn Leu Pro Arg His Arg Ala Val Asn				
3605		3610		3615
Leu Phe Leu Gln Gly Tyr Glu Lys Ser Trp Ile Glu Thr Glu Glu				
3620		3625		3630
His Tyr Phe Glu Asp Lys Leu Ile Glu Asp Leu Ala Lys Pro Gly				
3635		3640		3645
Ala Glu Pro Pro Glu Glu Asp Glu Gly Thr Lys Arg Val Asp Pro				
3650		3655		3660
Leu His Gln Leu Ile Leu Leu Phe Ser Arg Thr Ala Leu Thr Glu				
3665		3670		3675
Lys Cys Lys Leu Glu Glu Asp Phe Leu Tyr Met Ala Tyr Ala Asp				
3680		3685		3690
Ile Met Ala Lys Ser Cys His Asp Glu Glu Asp Asp Asp Gly Glu				
3695		3700		3705
Glu Glu Val Lys Ser Phe Glu Glu Lys Glu Met Glu Lys Gln Lys				
3710		3715		3720
Leu Leu Tyr Gln Gln Ala Arg Leu His Asp Arg Gly Ala Ala Glu				
3725		3730		3735
Met Val Leu Gln Thr Ile Ser Ala Ser Lys Gly Glu Thr Gly Pro				
3740		3745		3750
Met Val Ala Ala Thr Leu Lys Leu Gly Ile Ala Ile Leu Asn Gly				

3755						3760					3765			
Gly Asn Ser Thr Val Gln	Gln	Lys Met Leu Asp Tyr	Leu Lys Glu											
3770					3775					3780				
Lys Lys Asp Val Gly Phe	Phe	Gln Ser Leu Ala Gly	Leu Met Gln											
3785					3790					3795				
Ser Cys Ser Val Leu Asp	Leu	Asn Ala Phe Glu Arg	Gln Asn Lys											
3800					3805					3810				
Ala Glu Gly Leu Gly Met	Val	Thr Glu Glu Gly Ser	Gly Glu Lys											
3815					3820					3825				
Val Leu Gln Asp Asp Glu	Phe	Thr Cys Asp Leu Phe	Arg Phe Leu											
3830					3835					3840				
Gln Leu Leu Cys Glu Gly	His	Asn Ser Asp Phe Gln	Asn Tyr Leu											
3845					3850					3855				
Arg Thr Gln Thr Gly Asn	Asn	Thr Thr Val Asn Ile	Ile Ile Ser											
3860					3865					3870				
Thr Val Asp Tyr Leu Leu	Arg	Val Gln Glu Ser Ile	Ser Asp Phe											
3875					3880					3885				
Tyr Trp Tyr Tyr Ser Gly	Lys	Asp Val Ile Asp Glu	Gln Gly Gln											
3890					3895					3900				
Arg Asn Phe Ser Lys Ala	Ile	Gln Val Ala Lys Gln	Val Phe Asn											
3905					3910					3915				
Thr Leu Thr Glu Tyr Ile	Gln	Gly Pro Cys Thr Gly	Asn Gln Gln											
3920					3925					3930				
Ser Leu Ala His Ser Arg	Leu	Trp Asp Ala Val Val	Gly Phe Leu											
3935					3940					3945				
His Val Phe Ala His Met	Gln	Met Lys Leu Ser Gln	Asp Ser Ser											
3950					3955					3960				
Gln Ile Glu Leu Leu Lys	Glu	Leu Met Asp Leu Gln	Lys Asp Met											
3965					3970					3975				
Val Val Met Leu Leu Ser	Met	Leu Glu Gly Asn Val	Val Asn Gly											
3980					3985					3990				
Thr Ile Gly Lys Gln Met	Val	Asp Met Leu Val Glu	Ser Ser Asn											
3995					4000					4005				
Asn Val Glu Met Ile Leu	Lys	Phe Phe Asp Met Phe	Leu Lys Leu											
4010					4015					4020				
Lys Asp Leu Thr Ser Ser	Asp	Thr Phe Lys Glu Tyr	Asp Pro Asp											
4025					4030					4035				
Gly Lys Gly Val Ile Ser	Lys	Arg Asp Phe His Lys	Ala Met Glu											
4040					4045					4050				
Ser His Lys His Tyr Thr	Gln	Ser Glu Thr Glu Phe	Leu Leu Ser											

4055	4060	4065
Cys Ala Glu Thr Asp Glu Asn 4070	Glu Thr Leu Asp Tyr 4075	Glu Glu Phe 4080
Val Lys Arg Phe His Glu Pro 4085	Ala Lys Asp Ile Gly 4090	Phe Asn Val 4095
Ala Val Leu Leu Thr Asn Leu 4100	Ser Glu His Met Pro 4105	Asn Asp Thr 4110
Arg Leu Gln Thr Phe Leu Glu 4115	Leu Ala Glu Ser Val 4120	Leu Asn Tyr 4125
Phe Gln Pro Phe Leu Gly Arg 4130	Ile Glu Ile Met Gly 4135	Ser Ala Lys 4140
Arg Ile Glu Arg Val Tyr Phe 4145	Glu Ile Ser Glu Ser 4150	Ser Arg Thr 4155
Gln Trp Glu Lys Pro Gln Val 4160	Lys Glu Ser Lys Arg 4165	Gln Phe Ile 4170
Phe Asp Val Val Asn Glu Gly 4175	Gly Glu Lys Glu Lys 4180	Met Glu Leu 4185
Phe Val Asn Phe Cys Glu Asp 4190	Thr Ile Phe Glu Met 4195	Gln Leu Ala 4200
Ala Gln Ile Ser Glu Ser Asp 4205	Leu Asn Glu Arg Ser 4210	Ala Asn Lys 4215
Glu Glu Ser Glu Lys Glu Arg 4220	Pro Glu Glu Gln Gly 4225	Pro Arg Met 4230
Ala Phe Phe Ser Ile Leu Thr 4235	Val Arg Ser Ala Leu 4240	Phe Ala Leu 4245
Arg Tyr Asn Ile Leu Thr Leu 4250	Met Arg Met Leu Ser 4255	Leu Lys Ser 4260
Leu Lys Lys Gln Met Lys Lys 4265	Val Lys Lys Met Thr 4270	Val Lys Asp 4275
Met Val Thr Ala Phe Phe Ser 4280	Ser Tyr Trp Ser Ile 4285	Phe Met Thr 4290
Leu Leu His Phe Val Ala Ser 4295	Val Phe Arg Gly Phe 4300	Phe Arg Ile 4305
Ile Cys Ser Leu Leu Leu Gly 4310	Gly Ser Leu Val Glu 4315	Gly Ala Lys 4320
Lys Ile Lys Val Ala Glu Leu 4325	Leu Ala Asn Met Pro 4330	Asp Pro Thr 4335
Gln Asp Glu Val Arg Gly Asp 4340	Gly Glu Glu Gly Glu 4345	Arg Lys Pro 4350
Leu Glu Ala Ala Leu Pro Ser	Glu Asp Leu Thr Asp	Leu Lys Glu

4355	4360	4365
Leu Thr Glu Glu Ser Asp 4370	Leu Leu Ser Asp Ile 4375	Phe Gly Leu Asp 4380
Leu Lys Arg Glu Gly Gly Gln 4385	Tyr Lys Leu Ile 4390	Pro His Asn Pro 4395
Asn Ala Gly Leu Ser Asp 4400	Leu Met Ser Asn Pro 4405	Val Pro Met Pro 4410
Glu Val Gln Glu Lys Phe 4415	Gln Glu Gln Lys Ala 4420	Lys Glu Glu Glu 4425
Lys Glu Glu Lys Glu Glu Thr 4430	Lys Ser Glu Pro 4435	Glu Lys Ala Glu 4440
Gly Glu Asp Gly Glu Lys 4445	Glu Lys Ala Lys 4450	Glu Asp Lys Gly 4455
Lys Gln Lys Leu Arg Gln 4460	Leu His Thr His Arg 4465	Tyr Gly Glu Pro 4470
Glu Val Pro Glu Ser Ala 4475	Phe Trp Lys Lys Ile 4480	Ile Ala Tyr Gln 4485
Gln Lys Leu Leu Asn Tyr 4490	Phe Ala Arg Asn Phe 4495	Tyr Asn Met Arg 4500
Met Leu Ala Leu Phe Val 4505	Ala Phe Ala Ile Asn 4510	Phe Ile Leu Leu 4515
Phe Tyr Lys Val Ser Thr 4520	Ser Ser Val Val Glu 4525	Gly Lys Glu Leu 4530
Pro Thr Arg Ser Ser Ser 4535	Glu Asn Ala Lys Val 4540	Thr Ser Leu Asp 4545
Ser Ser Ser His Arg Ile 4550	Ile Ala Val His Tyr 4555	Val Leu Glu Glu 4560
Ser Ser Gly Tyr Met Glu 4565	Pro Thr Leu Arg Ile 4570	Leu Ala Ile Leu 4575
His Thr Val Ile Ser Phe 4580	Phe Cys Ile Ile Gly 4585	Tyr Tyr Cys Leu 4590
Lys Val Pro Leu Val Ile 4595	Phe Lys Arg Glu Lys 4600	Glu Val Ala Arg 4605
Lys Leu Glu Phe Asp Gly 4610	Leu Tyr Ile Thr Glu 4615	Gln Pro Ser Glu 4620
Asp Asp Ile Lys Gly Gln 4625	Trp Asp Arg Leu Val 4630	Ile Asn Thr Gln 4635
Ser Phe Pro Asn Asn Tyr 4640	Trp Asp Lys Phe Val 4645	Lys Arg Lys Val 4650
Met Asp Lys Tyr Gly Glu 4655	Phe Tyr Gly Arg Asp 4660	Arg Ile Ser Glu 4665

4655		4660		4665
Leu Leu Gly Met Asp Lys	Ala Ala Leu Asp Phe	Ser Asp Ala Arg		
4670	4675	4680		
Glu Lys Lys Lys Pro Lys	Lys Asp Ser Ser Leu	Ser Ala Val Leu		
4685	4690	4695		
Asn Ser Ile Asp Val Lys	Tyr Gln Met Trp Lys	Leu Gly Val Val		
4700	4705	4710		
Phe Thr Asp Asn Ser Phe	Leu Tyr Leu Ala Trp	Tyr Met Thr Met		
4715	4720	4725		
Ser Val Leu Gly His Tyr	Asn Asn Phe Phe Phe	Ala Ala His Leu		
4730	4735	4740		
Leu Asp Ile Ala Met Gly	Phe Lys Thr Leu Arg	Thr Ile Leu Ser		
4745	4750	4755		
Ser Val Thr His Asn Gly	Lys Gln Leu Val Leu	Thr Val Gly Leu		
4760	4765	4770		
Leu Ala Val Val Val Tyr	Leu Tyr Thr Val Val	Ala Phe Asn Phe		
4775	4780	4785		
Phe Arg Lys Phe Tyr Asn	Lys Ser Glu Asp Gly	Asp Thr Pro Asp		
4790	4795	4800		
Met Lys Cys Asp Asp Met	Leu Thr Cys Tyr Met	Phe His Met Tyr		
4805	4810	4815		
Val Gly Val Arg Ala Gly	Gly Gly Ile Gly Asp	Glu Ile Glu Asp		
4820	4825	4830		
Pro Ala Gly Asp Glu Tyr	Glu Ile Tyr Arg Ile	Ile Phe Asp Ile		
4835	4840	4845		
Thr Phe Phe Phe Phe Val	Ile Val Ile Leu Leu	Ala Ile Ile Gln		
4850	4855	4860		
Gly Leu Ile Ile Asp Ala	Phe Gly Glu Leu Arg	Asp Gln Gln Glu		
4865	4870	4875		
Gln Val Lys Glu Asp Met	Glu Thr Lys Cys Phe	Ile Cys Gly Ile		
4880	4885	4890		
Gly Asn Asp Tyr Phe Asp	Thr Val Pro His Gly	Phe Glu Thr His		
4895	4900	4905		
Thr Leu Gln Glu His Asn	Leu Ala Asn Tyr Leu	Phe Phe Leu Met		
4910	4915	4920		
Tyr Leu Ile Asn Lys Asp	Glu Thr Glu His Thr	Gly Gln Glu Ser		
4925	4930	4935		
Tyr Val Trp Lys Met Tyr	Gln Glu Arg Cys Trp	Glu Phe Phe Pro		
4940	4945	4950		
Ala Gly Asp Cys Phe Arg	Lys Gln Tyr Glu Asp	Gln Leu Asn		

4955

4960

4965

<210> 63  
 <211> 57  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (16)..(16)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (22)..(22)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (31)..(31)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (37)..(37)  
 <223> Xaa = any amino acid

<400> 63  
 Ser Cys Thr Ala Thr Gly Glu Arg Val Cys Leu Ala Ala Glu Gly Xaa  
 1 5 10 15  
 Gly Asn Arg His Cys Xaa Leu Glu Asn Ile Ala Asp Lys Asn Xaa Pro  
 20 25 30  
 Pro Asp Leu Ser Xaa Cys Val Phe Val Ile Glu Gln Ala Leu Ser Val  
 35 40 45  
 Arg Ala Leu Gln Glu Leu Val Thr Ala  
 50 55

<210> 64  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (14)..(14)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (23)..(23)  
 <223> Xaa = any amino acid

<400> 64  
 Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Xaa Asn Ser  
 1 5 10 15

Asp Met Tyr Leu Ala Cys Xaa Ser Thr Ser Ser Ser  
 20 25

<210> 65  
 <211> 48  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 65  
 Val Asn Ala Ser Phe His Val Thr His Trp Ser Val Gln Pro Tyr Gly  
 1 5 10 15  
 Thr Gly Ile Ser Arg Met Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp  
 20 25 30  
 Val Leu Arg Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser  
 35 40 45

<210> 66  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (16)..(16)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (23)..(23)  
 <223> Xaa = any amino acid

<400> 66  
 Gln Ala Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Xaa  
 1 5 10 15  
 Gly Gly Phe Ile Asn Trp Xaa His Pro Met Arg Ile Arg His  
 20 25 30

<210> 67  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (8)..(8)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (11)..(11)

<223> Xaa = any amino acid

<400> 67

Leu Glu Asp Lys Asp Leu Glu Xaa Ile Gly Xaa Pro Ile Ile Lys Tyr  
1 5 10 15

Gly Asp

<210> 68

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (20)..(20)

<223> Xaa = any amino acid

<400> 68

Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly Val Gly Lys Val Glu Glu  
1 5 10 15

Lys Gln Ala Xaa Leu His Glu Glu Gly Lys Met Asp Asp  
20 25

<210> 69

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (9)..(9)

<223> Xaa = any amino acid

<400> 69

Ser Arg Ser Gln Glu Glu Glu Ser Xaa Thr Ala Arg Val Ile Arg Lys  
1 5 10 15

Cys Ser Ser Leu Phe Thr  
20

<210> 70

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (10)..(10)

<223> Xaa = any amino acid

<220>

<221> UNSURE

<222> (11)..(11)



<223> Xaa = any amino acid

<220>

<221> UNSURE

<222> (26)..(26)

<223> Xaa = any amino acid

<400> 70

Asp Met Glu His Glu Glu Lys Gln Asn Xaa Xaa Arg Ala Leu Arg Asn  
1 5 10 15

Arg Gln Asp Leu Phe Gln Glu Glu Gly Xaa Leu Asn Leu Ile Leu Glu  
20 25 30

Ala Ile Asp Lys  
35

<210> 71

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223>

<400> 71

Tyr Leu Tyr Gln Leu Leu Ala Ala Ile Ile Lys Gly Asn His Thr Asn  
1 5 10 15

Cys Ala Gln Phe Ala Asn  
20

<210> 72

<211> 65

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (9)..(9)

<223> Xaa = any amino acid

<220>

<221> UNSURE

<222> (21)..(21)

<223> Xaa = any amino acid

<400> 72

Gly Met Leu Asp Val Leu His Cys Xaa Leu Ile Asp Ser Pro Glu Ala  
1 5 10 15

Leu Asn Met Met Xaa Asp Glu His Ile Lys Val Ile Ile Ser Leu Leu  
20 25 30

Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser Leu  
35 40 45

Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile Cys

50

55

60

Asp  
65

<210> 73  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (10)..(10)  
<223> Xaa = any amino acid

<400> 73  
Gly Tyr Val Pro Tyr Pro Gly Gly Gly Xaa Lys Trp Gly Gly Asn Gly  
1 5 10 15

Val Gly Asp

<210> 74  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (12)..(12)  
<223> Xaa = any amino acid

<400> 74  
Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Xaa Asn Lys Ile Glu  
1 5 10 15

Ala Gly Trp

<210> 75  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (7)..(7)  
<223> Xaa = any amino acid

<400> 75  
Ala Glu Lys Arg Tyr Asp Xaa Gln Leu Ala Val Gln Thr Leu Lys Thr  
1 5 10 15

<210> 76  
<211> 21  
<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (8)..(8)

<223> Xaa = any amino acid

<400> 76

Asn Thr His Asn Leu Trp Ala Xaa Glu Arg Ile Gln Gln Gly Trp Thr  
1 5 10 15

Tyr Gly Leu Asn Glu  
20

<210> 77

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (9)..(9)

<223> Xaa = any amino acid

<220>

<221> UNSURE

<222> (13)..(13)

<223> Xaa = any amino acid

<400> 77

Arg Ser Pro His Leu Val Pro Tyr Xaa Lys Val Asp Xaa Ala Ile Lys  
1 5 10 15

Lys Ala Asn Arg Asp Thr Ala Ser Glu Thr  
20 25

<210> 78

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (6)..(6)

<223> Xaa = any amino acid

<400> 78

Trp Tyr Thr Lys Asp Xaa Pro Ile Phe Glu Asn Thr  
1 5 10

<210> 79

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE  
<222> (4)..(4)  
<223> Xaa = any amino acid

<400> 79  
Val Glu Ala Xaa Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg  
1 5 10 15

<210> 80  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (10)..(10)  
<223> Xaa = any amino acid

<400> 80  
Pro Pro Arg Leu Lys Val Gln Cys Leu Xaa Pro His Gln Trp Ala Arg  
1 5 10 15

Val Pro Asn

<210> 81  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (10)..(10)  
<223> Xaa = any amino acid

<400> 81  
Ala Leu His Ile Pro Glu Glu Asp Arg Xaa Ile Asp Ile Leu Glu Leu  
1 5 10 15

Ile Glu

<210> 82  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (9)..(9)  
<223> Xaa = any amino acid

<400> 82  
Asp Glu His Arg Lys Gly Leu Leu Xaa Met Lys Met Ala Glu Gly Ala  
1 5 10 15

Lys Leu Gln Met Cys Tyr Leu Leu  
20

<210> 83  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (11)..(11)  
<223> Xaa = any amino acid

<220>  
<221> UNSURE  
<222> (17)..(17)  
<223> Xaa = any amino acid

<400> 83  
Glu Ile Lys Gln Ser Asp Leu Pro Ser Ala Xaa Ala Ala Lys Lys Thr  
1 5 10 15

Xaa Glu Phe Arg Cys Pro Pro Arg Glu Gln Met Asn  
20 25

<210> 84  
<211> 42  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (7)..(7)  
<223> Xaa = any amino acid

<220>  
<221> UNSURE  
<222> (19)..(19)  
<223> Xaa = any amino acid

<220>  
<221> UNSURE  
<222> (23)..(23)  
<223> Xaa = any amino acid

<220>  
<221> UNSURE  
<222> (32)..(32)  
<223> Xaa = any amino acid

<400> 84  
Gly Leu Ser Gln Ile Arg Xaa Leu Leu Pro Val Gln Met Ser Gln Glu  
1 5 10 15

Glu Glu Xaa Leu Met Arg Xaa Arg Leu Trp Lys Leu Val Asn Asn Xaa  
20 25 30

Thr Phe Phe Gln His Pro Asp Leu Ile Arg  
 35 40

<210> 85  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (8)..(8)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (24)..(24)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (26)..(26)  
 <223> Xaa = any amino acid

<400> 85  
 Lys Glu Lys Asp Thr Ser His Xaa Met Val Val Ala Cys Cys Arg Phe  
 1 5 10 15

Leu Cys Tyr Phe Cys Arg Thr Xaa Arg Xaa Asn Gln Lys Ala Met Phe  
 20 25 30

Asp His Phe  
 35

<210> 86  
 <211> 50  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (37)..(37)  
 <223> Xaa = any amino acid

<400> 86  
 Arg Pro Ser Leu Arg Gly Ser Thr Pro Leu Asp Val Ala Tyr Ser Ser  
 1 5 10 15

Leu Met Glu Asn Thr Glu Leu Ala Leu Ala Leu Arg Glu His Tyr Leu  
 20 25 30

Glu Lys Ile Ala Xaa Tyr Leu Ser Arg Cys Gly Leu Gln Ser Asn Ser  
 35 40 45

Glu Leu  
 50

<210> 87

<211> 59  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> UNSURE  
 <222> (21)..(21)  
 <223> Xaa = any amino acid  
  
 <220>  
 <221> UNSURE  
 <222> (46)..(46)  
 <223> Xaa = any amino acid  
  
 <400> 87  
 Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu Arg Tyr Leu  
 1 5 10 15  
 Asp Phe Leu Arg Xaa Cys Val Trp Val Asn Gly Glu Ser Val Glu Glu  
 20 25 30  
 Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg Arg Pro Xaa Cys Leu  
 35 40 45  
 Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly Leu  
 50 55

<210> 88  
 <211> 24  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> UNSURE  
 <222> (13)..(13)  
 <223> Xaa = any amino acid

<400> 88  
 Asp Glu Asp Tyr Ile Asp Thr Gly Ala Ala Ile Leu Xaa Phe Tyr Cys  
 1 5 10 15  
 Thr Leu Val Asp Leu Leu Gly Arg  
 20

<210> 89  
 <211> 21  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 89  
 Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu Val  
 1 5 10 15  
 Pro Leu Glu Asp Leu  
 20

<210> 90  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (12)..(12)  
 <223> Xaa = any amino acid

<400> 90  
 Leu Leu Asp Ala Thr Leu His Thr Val Tyr Arg Xaa Ser Lys Asn Arg  
 1 5 10 15  
 Met Leu Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala  
 20 25 30  
 Leu Thr Ser  
 35

<210> 91  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (15)..(15)  
 <223> Xaa = any amino acid

<400> 91  
 Met Leu Leu Lys Leu Leu Arg Lys Leu Thr Xaa Asp Val Ser Xaa Leu  
 1 5 10 15  
 Ser Glu Tyr Thr Thr Val Ala Leu Arg Leu Leu Thr Leu His  
 20 25 30

<210> 92  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 92  
 Gly Ala Ser Ser Asp Glu Glu Lys Arg Leu Thr Met  
 1 5 10



<210> 93  
<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (12)..(12)  
<223> Xaa = any amino acid

<400> 93  
Pro Glu Leu Phe Gly Lys Ala Leu Pro Cys Leu Xaa Ala Ile Gly Cys  
1 5 10 15

Ala Leu Pro Pro Asp Tyr  
20

<210> 94  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (14)..(14)  
<223> Xaa = any amino acid

<400> 94  
Gln Leu Val Pro Tyr Asp Leu Leu Thr Asp Lys Glu Lys Xaa Lys Asp  
1 5 10 15

Arg Glu Arg Ser Gln Glu Phe Leu Lys Tyr  
20 25

<210> 95  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223>

<400> 95  
Gly Ala Ala Ser Leu Lys Glu Lys Glu Met Val Ala  
1 5 10

<210> 96  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223>

<400> 96  
Lys Asn Cys Pro Glu Phe Ile Arg Thr Ser Met Leu Thr Phe Phe  
1 5 10 15

<210> 97  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> UNSURE  
 <222> (9)..(9)  
 <223> Xaa = any amino acid  
  
 <400> 97  
 Tyr Thr Gln Gln Ile Ile Ile Asn Xaa Ser Glu Glu Leu Leu  
 1 5 10

<210> 98  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid  
  
 <400> 98  
 Phe Tyr Pro Leu Leu Ile Lys Tyr Val Asp Xaa Gln Arg Asn His Trp  
 1 5 10 15  
  
 Leu

<210> 99  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> UNSURE  
 <222> (9)..(9)  
 <223> Xaa = any amino acid  
  
 <220>  
 <221> UNSURE  
 <222> (24)..(24)  
 <223> Xaa = any amino acid  
  
 <400> 99  
 Trp Ser Lys Ser Gln Tyr Phe Leu Xaa Glu Glu Gln Asn Phe Ile Ser  
 1 5 10 15  
  
 Ala Asn Glu Ile Asp Asn Met Xaa Leu Ile Met Pro Thr Ala Thr Arg  
 20 25 30  
  
 Arg

<210> 100  
 <211> 32  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <221> UNSURE  
 <222> (21)..(21)  
 <223> Xaa = any amino acid  
  
 <400> 100  
 Ser Leu Met Val Ala Cys Leu Lys Arg Leu Leu Pro Val Gly Leu Asn  
 1 5 10 15  
  
 Leu Phe Ala Gly Xaa Glu Gln Glu Leu Val Gln His Cys Lys Asp Arg  
 20 25 30

<210> 101  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 101  
 Asp Glu Met Ser Trp Gln His Tyr Leu Tyr Ser Lys  
 1 5 10

<210> 102  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (7)..(7)  
 <223> Xaa = any amino acid

<400> 102  
 Tyr Arg Ser Val Val Ser Xaa Gln Arg Lys Arg Ala Val Ile Ala Cys  
 1 5 10 15

Phe Arg Gln

<210> 103  
 <211> 22  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (16)..(16)  
 <223> Xaa = any amino acid

<400> 103  
 Cys Arg Gly Ala Met Thr Glu Arg Ser Gly Ala Leu Gln Glu Asp Xaa  
 1 5 10 15

Leu Tyr Met Ser Tyr Ala  
 20

<210> 104  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 104  
 Ser Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His Gln  
 1 5 10 15

Ala Arg

<210> 105  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 105  
 Arg Gly Val Ala Glu Met Val Leu Leu His Ile Ser Ala  
 1 5 10

<210> 106  
 <211> 48  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (21)..(21)  
 <223> Xaa = any amino acid

<400> 106  
 Ile Gln Met Gly Met Leu Asn His Leu Lys Xaa Lys Lys Asp Val Gly  
 1 5 10 15

Phe Phe Thr Ser Xaa Ala Gly Leu Met Asn Ser Cys Ser Val Leu Asp  
 20 25 30

Leu Asp Ala Phe Glu Arg Asn Thr Lys Ala Glu Gly Leu Gly Val Gly

35

40

45

<210> 107  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (16)..(16)  
 <223> Xaa = any amino acid

<400> 107  
 Gly Ala Ala Gly Glu Lys Asn Met His Asp Ala Glu Phe Thr Cys Xaa  
 1 5 10 15  
 Leu Phe Arg Phe Ile Gln Leu Thr Cys Glu Gly His Asn Leu  
 20 25 30

<210> 108  
 <211> 53  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (14)..(14)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (40)..(40)  
 <223> Xaa = any amino acid

<400> 108  
 Leu Arg Thr Gln Ala Gly Asn Thr Thr Thr Val Asn Val Xaa Ile Cys  
 1 5 10 15  
 Thr Val Asp Tyr Leu Leu Arg Leu Gln Glu Ser Ile Met Asp Phe Tyr  
 20 25 30  
 Trp His Tyr Ser Ser Lys Glu Xaa Ile Asp Pro Ala Gly Lys Ala Asn  
 35 40 45  
 Phe Phe Lys Ala Ile  
 50

<210> 109  
 <211> 93  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (9)..(9)  
 <223> Xaa = any amino acid

```

<220>
<221>  UNSURE
<222>  (44)..(44)
<223>  Xaa = any amino acid

<220>
<221>  UNSURE
<222>  (66)..(66)
<223>  Xaa = any amino acid

<220>
<221>  UNSURE
<222>  (75)..(75)
<223>  Xaa = any amino acid

<400>  109
Asn Gln Gln Ala Leu Ala His Ser Xaa Leu Trp Asp Ala Val Gly Gly
1          5          10          15

Phe Leu Phe Leu Phe Ser His Met Gln Asp Lys Leu Ser Lys His Ser
20          25          30

Ser Gln Val Asp Leu Leu Lys Glu Leu Leu Asn Xaa Gln Lys Asp Met
35          40          45

Ile Thr Met Met Leu Ser Met Leu Glu Gly Asn Val Val Asn Gly Thr
50          55          60

Ile Xaa Lys Gln Met Val Asp Thr Leu Val Xaa Ser Ala Ser Asn Val
65          70          75          80

Glu Leu Ile Leu Lys Tyr Phe Asp Met Phe Leu Lys Leu
85          90

<210>  110
<211>  24
<212>  PRT
<213>  Artificial Sequence

<220>
<223>

<400>  110
Lys Glu Ile Gly Phe Asn Leu Ala Val Leu Leu Thr Asn Leu Ser Glu
1          5          10          15

His Met Pro Asn Glu Pro Arg Leu
20

<210>  111
<211>  19
<212>  PRT
<213>  Artificial Sequence

<220>
<221>  UNSURE
<222>  (13)..(14)
<223>  Xaa = any amino acid

```

<400> 111  
 Ser Lys Arg Ile Glu Arg Val Tyr Phe Glu Ile Lys Xaa Xaa Asn Ile  
 1 5 10 15

Glu Gln Trp

<210> 112  
 <211> 34  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (17)..(17)  
 <223> Xaa = any amino acid

<400> 112  
 Glu Ser Lys Arg Ala Phe Phe Tyr Ser Ile Val Thr Glu Gly Gly Asp  
 1 5 10 15

Xaa Glu Lys Leu Glu Ala Phe Val Asn Phe Cys Glu Asp Ala Ile Phe  
 20 25 30

Glu Met

<210> 113  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 113  
 Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu Ala  
 1 5 10 15

Phe

<210> 114  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 114  
 Tyr Tyr His Leu Lys Val Pro Leu Ala Ile Phe Lys Arg Glu Lys Glu  
 1 5 10 15

Ile Ala Arg

<210> 115  
 <211> 50  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (8)..(8)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (21)..(21)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (31)..(31)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (37)..(37)  
 <223> Xaa = any amino acid

<400> 115  
 Glu Gln Pro Glu Asp Asp Asp Xaa Lys Ser His Trp Asp Lys Leu Val  
 1 5 10 15  
 Ile Ser Ala Lys Xaa Phe Pro Val Asn Tyr Trp Asp Lys Phe Xaa Lys  
 20 25 30  
 Lys Lys Val Arg Xaa Lys Tyr Ser Glu Thr Tyr Asp Phe Asp Ser Ile  
 35 40 45  
 Ser Asn  
 50

<210> 116  
 <211> 57  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (36)..(36)  
 <223> Xaa = any amino acid

<400> 116  
 Phe Phe Phe Ala Ala His Leu Leu Asp Val Ala Val Gly Phe Lys Thr  
 1 5 10 15  
 Leu Arg Thr Ile Leu Gln Ser Val Thr His Asn Gly Lys Gln Leu Val  
 20 25 30  
 Leu Thr Val Xaa Leu Leu Thr Ile Ile Val Tyr Ile Tyr Thr Val Ile  
 35 40 45



Ala Phe Asn Phe Phe Arg Lys Phe Tyr  
 50 55

<210> 117  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<400> 117  
 Cys His Asp Met Leu Thr Cys Phe Val Phe Xaa Leu Tyr Lys Gly Val  
 1 5 10 15

Arg Ala Gly Gly Gly Ile Gly Asp Glu  
 20 25

<210> 118  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 118  
 Ile Leu Leu Ala Ile Ile Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu  
 1 5 10 15

Leu Arg Asp Gln Leu Glu Ser Val Lys  
 20 25

<210> 119  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 119  
 Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile Asn  
 1 5 10 15

Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp Asn Met  
 20 25 30

Tyr

<210> 120  
 <211> 5127

<212> PRT  
 <213> Drosophila melanogaster

<220>  
 <223> gi 17352465

<400> 120  
 Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15  
 Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe  
 260 265 270  
 Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
 275 280 285

Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
290 295 300  
Glu Ala Ser Ile Ala Thr Thr Thr Phe Cys Leu Arg Gln Glu Lys Asp  
305 310 315 320  
Asp Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser  
325 330 335  
Pro Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu  
340 345 350  
Thr Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly  
355 360 365  
Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys  
370 375 380  
Met Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys  
385 390 395 400  
Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile  
405 410 415  
Thr Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe  
420 425 430  
Gln Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile  
435 440 445  
Asn Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln  
450 455 460  
Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu  
465 470 475 480  
Gly Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Ile Ile  
485 490 495  
Thr Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly  
500 505 510  
Gln Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala  
515 520 525  
Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn  
530 535 540  
Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu  
545 550 555 560  
Gly Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro  
565 570 575  
Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser  
580 585 590  
Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys  
595 600 605

Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn  
 610 615 620  
 Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu  
 625 630 635 640  
 Leu Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg  
 645 650 655  
 Val Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met  
 660 665 670  
 Asp His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly  
 675 680 685  
 Trp Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys  
 690 695 700  
 Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp  
 705 710 715 720  
 Gly Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala  
 725 730 735  
 Leu Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala  
 740 745 750  
 Ile Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys  
 755 760 765  
 Val Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro  
 770 775 780  
 Val Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly  
 785 790 795 800  
 Asp His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu  
 805 810 815  
 Val Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe  
 820 825 830  
 Tyr Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile  
 835 840 845  
 Glu Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val  
 850 855 860  
 Thr Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn  
 865 870 875 880  
 Ile His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp  
 885 890 895  
 Gly Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His  
 900 905 910  
 Phe Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala  
 915 920 925

Val	Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met
930						935					940				
Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Pro	Val	Arg	Leu	Pro	Asn	Glu	Ile
945					950					955				960	
Phe	Met	Gln	Gly	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala
				965					970					975	
Val	Thr	Leu	Thr	Pro	Lys	Leu	Glu	Glu	Leu	Val	Asp	Gln	Leu	Ala	Glu
			980					985					990		
Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr
		995					1000					1005			
Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu	
1010						1015					1020				
Val	Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg	
1025						1030					1035				
Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr	
1040						1045					1050				
Val	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gly	Thr	Glu	Ala	Leu	Leu	Ala	
1055						1060					1065				
Glu	Ala	Gln	Arg	Leu	Lys	Phe	Ala	Gly	Phe	Arg	Thr	Tyr	Arg	Val	
1070						1075					1080				
Glu	Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe	
1085						1090					1095				
Glu	Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala	
1100						1105					1110				
Asp	Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp	
1115						1120					1125				
Ala	Phe	Asp	Gly	His	Asn	Val	Thr	Lys	Met	His	Ala	Gly	Ser	Ile	
1130						1135					1140				
Glu	His	Phe	Gly	Val	Arg	Tyr	Glu	Ala	Gly	Asp	Val	Ile	Gly	Cys	
1145						1150					1155				
Phe	Ile	Asp	Val	Lys	Glu	Gln	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly	
1160						1165					1170				
Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp	
1175						1180					1185				
Val	Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	
1190						1195					1200				
Val	Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	
1205						1210					1215				
Leu	Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	
1220						1225					1230				

Phe	Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys
1235						1240					1245			
Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg
1250						1255					1260			
Ile	Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His
1265						1270					1275			
Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn
1280						1285					1290			
Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu
1295						1300					1305			
Phe	Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys
1310						1315					1320			
Asn	Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln
1325						1330					1335			
Met	Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys
1340						1345					1350			
Gly	Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe
1355						1360					1365			
Asp	Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro
1370						1375					1380			
Asn	Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe
1385						1390					1395			
Glu	Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr
1400						1405					1410			
Ser	Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys
1415						1420					1425			
Lys	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser
1430						1435					1440			
Arg	Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr
1445						1450					1455			
Ser	Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val
1460						1465					1470			
Asn	Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn
1475						1480					1485			
Ala	Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu
1490						1495					1500			
Ser	Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp
1505						1510					1515			
Glu	Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe
1520						1525					1530			

Tyr	Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr
1535						1540					1545			
Val	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe
1550						1555					1560			
Asn	Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp
1565						1570					1575			
Tyr	Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val
1580						1585					1590			
Val	Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser
1595						1600					1605			
Gly	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp
1610						1615					1620			
Thr	Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr
1625						1630					1635			
Ser	His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala
1640						1645					1650			
Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu
1655						1660					1665			
Gly	Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro
1670						1675					1680			
Thr	Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys
1685						1690					1695			
Val	Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr
1700						1705					1710			
Ala	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp
1715						1720					1725			
Ser	Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile
1730						1735					1740			
Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met
1745						1750					1755			
Asp	Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala
1760						1765					1770			
Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys
1775						1780					1785			
Gln	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Glu
1790						1795					1800			
Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile
1805						1810					1815			
Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys
1820						1825					1830			

Asn	Glu	Tyr	Ile	Thr	Pro	Leu	Gly	Ala	Glu	Leu	Lys	Glu	Leu	Tyr
1835						1840					1845			
Ser	Asp	Glu	Glu	Met	Gln	His	Ser	Leu	Arg	Ser	Leu	Val	Thr	Glu
1850						1855					1860			
Ser	Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Pro	Pro	Val
1865						1870					1875			
Ile	Ala	Thr	Ser	Ser	Met	Pro	Ser	Val	Ser	Ser	Glu	Pro	Ile	Pro
1880						1885					1890			
Asp	Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val	Val
1895						1900					1905			
Arg	Gln	Phe	Val	Met	Glu	Ala	Leu	Lys	Asp	Ala	Val	Glu	Ile	Asn
1910						1915					1920			
Gln	Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn	Leu
1925						1930					1935			
Phe	Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val	Gly
1940						1945					1950			
Val	Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile	Asp
1955						1960					1965			
Pro	Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp	Glu
1970						1975					1980			
His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys
1985						1990					1995			
Leu	Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln	Leu
2000						2005					2010			
Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe	Val
2015						2020					2025			
Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	Lys
2030						2035					2040			
Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	Glu
2045						2050					2055			
Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe
2060						2065					2070			
Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu
2075						2080					2085			
Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln
2090						2095					2100			
Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly
2105						2110					2115			
Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr
2120						2125					2130			



Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu
2135						2140					2145			
Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys
2150						2155					2160			
Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile
2165						2170					2175			
Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg
2180						2185					2190			
Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr
2195						2200					2205			
Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp
2210						2215					2220			
Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser
2225						2230					2235			
Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val
2240						2245					2250			
Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu
2255						2260					2265			
Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly
2270						2275					2280			
Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val
2285						2290					2295			
Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met
2300						2305					2310			
Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly
2315						2320					2325			
Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu
2330						2335					2340			
Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser
2345						2350					2355			
Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu
2360						2365					2370			
Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val
2375						2380					2385			
Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu
2390						2395					2400			
Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg
2405						2410					2415			
Tyr	Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser
2420						2425					2430			

Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg
2435						2440					2445			
Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu
2450						2455					2460			
Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser
2465						2470					2475			
Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly
2480						2485					2490			
Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp
2495						2500					2505			
Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu
2510						2515					2520			
Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu
2525						2530					2535			
Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser
2540						2545					2550			
Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe
2555						2560					2565			
Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp
2570						2575					2580			
Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu
2585						2590					2595			
Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr
2600						2605					2610			
Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr
2615						2620					2625			
Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala
2630						2635					2640			
Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys
2645						2650					2655			
His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu
2660						2665					2670			
Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met
2675						2680					2685			
Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala
2690						2695					2700			
Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg
2705						2710					2715			
Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val
2720						2725					2730			

Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr
2735						2740					2745			
Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp
2750						2755					2760			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2765						2770					2775			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2780						2785					2790			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2795						2800					2805			
Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met
2810						2815					2820			
Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr
2825						2830					2835			
Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys
2840						2845					2850			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu
2855						2860					2865			
Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys
2870						2875					2880			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg
2885						2890					2895			
Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu
2900						2905					2910			
Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Ala	Leu
2915						2920					2925			
Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn
2930						2935					2940			
Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro
2945						2950					2955			
Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met
2960						2965					2970			
Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys
2975						2980					2985			
Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln
2990						2995					3000			
Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp
3005						3010					3015			
Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly
3020						3025					3030			

Tyr	Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly
3035						3040					3045			
Gly	Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu
3050						3055					3060			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met
3065						3070					3075			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3080						3085					3090			
Lys	Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3095						3100					3105			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3110						3115					3120			
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys
3125						3130					3135			
Glu	Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu
3140						3145					3150			
Leu	Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3155						3160					3165			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr
3170						3175					3180			
Leu	Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr
3185						3190					3195			
Phe	Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn
3200						3205					3210			
Leu	Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys
3215						3220					3225			
Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val
3230						3235					3240			
Leu	Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser
3245						3250					3255			
Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu
3260						3265					3270			
Ala	Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp
3275						3280					3285			
Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu
3290						3295					3300			
Gly	Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe
3305						3310					3315			
Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn
3320						3325					3330			

Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys
3335						3340					3345			
Met	Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Ala	Glu	Val
3350						3355					3360			
Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His
3365						3370					3375			
Ile	Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe
3380						3385					3390			
Trp	Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn
3395						3400					3405			
His	Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg
3410						3415					3420			
Asn	Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala
3425						3430					3435			
Pro	Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile
3440						3445					3450			
Asn	Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala
3455						3460					3465			
Glu	Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp
3470						3475					3480			
Ser	Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln
3485						3490					3495			
Val	Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp
3500						3505					3510			
Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln
3515						3520					3525			
Arg	Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu
3530						3535					3540			
Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln
3545						3550					3555			
Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile
3560						3565					3570			
Asp	Asn	Met	Ala	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala
3575						3580					3585			
Ile	Ser	Glu	Gly	Ala	Pro	Ala	Val	Gly	Gly	Lys	Val	Lys	Lys	Lys
3590						3595					3600			
Lys	Lys	Asn	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln
3605						3610					3615			
Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly
3620						3625					3630			

Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys
3635						3640					3645			
Lys	Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu
3650						3655					3660			
Phe	Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ser
3665						3670					3675			
Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys
3680						3685					3690			
Thr	Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val
3695						3700					3705			
Asn	Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp
3710						3715					3720			
Arg	Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile
3725						3730					3735			
Asp	His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val
3740						3745					3750			
Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr
3755						3760					3765			
Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala
3770						3775					3780			
Arg	Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln
3785						3790					3795			
Glu	Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu
3800						3805					3810			
Lys	Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro
3815						3820					3825			
Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu
3830						3835					3840			
Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala
3845						3850					3855			
Gln	Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly
3860						3865					3870			
Asp	Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser
3875						3880					3885			
Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln
3890						3895					3900			
Ala	Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His
3905						3910					3915			
Ile	Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr
3920						3925					3930			

Leu	Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile
3935						3940					3945			
Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly
3950						3955					3960			
Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu
3965						3970					3975			
Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly
3980						3985					3990			
Val	Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala
3995						4000					4005			
Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu
4010						4015					4020			
Gly	His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly
4025						4030					4035			
Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu
4040						4045					4050			
Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser
4055						4060					4065			
Ser	Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys
4070						4075					4080			
Ala	Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	Val
4085						4090					4095			
Ile	Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser
4100						4105					4110			
Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His
4115						4120					4125			
Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu
4130						4135					4140			
Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu
4145						4150					4155			
Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln
4160						4165					4170			
Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile
4175						4180					4185			
Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu
4190						4195					4200			
Ser	Pro	Ser	Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val
4205						4210					4215			
Thr	Pro	Lys	Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr
4220						4225					4230			

Thr	Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn
4235						4240					4245			
His	Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His
4250						4255					4260			
Glu	Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr
4265						4270					4275			
Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe
4280						4285					4290			
Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu
4295						4300					4305			
Gly	Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val
4310						4315					4320			
Tyr	Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro
4325						4330					4335			
Gln	Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr
4340						4345					4350			
Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys
4355						4360					4365			
Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala
4370						4375					4380			
Thr	Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser
4385						4390					4395			
Ser	Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro
4400						4405					4410			
Ile	Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly
4415						4420					4425			
Val	His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val
4430						4435					4440			
Met	Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys
4445						4450					4455			
Ile	Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys
4460						4465					4470			
Val	Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly
4475						4480					4485			
Pro	Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr
4490						4495					4500			
Phe	Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly
4505						4510					4515			
Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly
4520						4525					4530			



Met	Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met
4535						4540					4545			
Glu	Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser
4550						4555					4560			
Gly	Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile
4565						4570					4575			
Val	Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu
4580						4585					4590			
Arg	Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile
4595						4600					4605			
Glu	Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro
4610						4615					4620			
Ala	Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val
4625						4630					4635			
Ser	Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu
4640						4645					4650			
Val	Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val
4655						4660					4665			
Thr	Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu
4670						4675					4680			
Ile	Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser
4685						4690					4695			
Gly	Phe	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met
4700						4705					4710			
Glu	Asp	Glu	Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe
4715						4720					4725			
Tyr	Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu
4730						4735					4740			
Val	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro
4745						4750					4755			
Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu
4760						4765					4770			
Phe	Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe
4775						4780					4785			
Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro
4790						4795					4800			
Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys
4805						4810					4815			
Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly
4820						4825					4830			

Met	Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly
4835						4840					4845			
Ile	Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp
4850						4855					4860			
Lys	Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu
4865						4870					4875			
Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe
4880						4885					4890			
Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu
4895						4900					4905			
Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val
4910						4915					4920			
Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val
4925						4930					4935			
Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp
4940						4945					4950			
Glu	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val
4955						4960					4965			
Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp
4970						4975					4980			
Glu	Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile
4985						4990					4995			
Ile	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu
5000						5005					5010			
Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg
5015						5020					5025			
Asp	Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe
5030						5035					5040			
Ile	Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly
5045						5050					5055			
Phe	Asp	Thr	His	Val	Gln	Lys	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met
5060						5065					5070			
Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr
5075						5080					5085			
Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr	Gln	Gln	Arg	Ser	Trp
5090						5095					5100			
Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp
5105						5110					5115			
Glu	Leu	Ser	Gly	Gly	Gly	Gly	Gly	Gly						
5120						5125								

<210> 121  
 <211> 5113  
 <212> PRT  
 <213> *Drosophila melanogaster*

<220>  
 <223> gi 17352467

<400> 121  
 Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15  
 Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe

260								265				270					
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg		
	275						280					285					
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu		
	290					295					300						
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Cys	Leu	Arg	Gln	Glu	Lys	Asp		
305					310				315						320		
Asp	Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser		
				325					330					335			
Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu		
			340						345				350				
Thr	Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly		
		355					360					365					
Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys		
	370					375					380						
Met	Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys		
385					390					395					400		
Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile		
				405					410						415		
Thr	Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe		
			420						425				430				
Gln	Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile		
		435					440					445					
Asn	Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln		
	450					455					460						
Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu		
465					470					475					480		
Gly	Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile		
				485					490					495			
Thr	Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly		
			500						505				510				
Gln	Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala		
		515					520					525					
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn		
	530					535					540						
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu		
545					550					555					560		
Gly	Ser	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro		
				565					570					575			
Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser		

580					585					590					
Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys
		595					600					605			
Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn
	610					615					620				
Ile	Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu
625					630					635					640
Leu	Val	Asp	His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg
				645					650					655	
Val	Asp	Gly	Ser	Ser	Met	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met
			660					665					670		
Asp	His	Ile	Glu	Gln	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	Gly
		675					680					685			
Trp	Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys
	690					695					700				
Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp
705					710					715					720
Gly	Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala
				725					730					735	
Leu	Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala
			740					745					750		
Ile	Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys
		755					760					765			
Val	Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro
	770					775					780				
Val	Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly
785					790					795					800
Asp	His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu
				805					810					815	
Val	Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe
			820					825					830		
Tyr	Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile
		835					840					845			
Glu	Asp	Asp	Thr	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Thr	Gly	Val
	850					855					860				
Thr	Leu	Pro	Ser	Ser	Val	Asp	Gln	Ile	Lys	Glu	Lys	Leu	Ala	Glu	Asn
865					870					875					880
Ile	His	Glu	Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Ser	Trp
				885					890					895	
Gly	Glu	His	Arg	Asp	Asp	Tyr	His	Arg	Ile	His	Pro	Cys	Leu	Thr	His

900					905					910					
Phe	Glu	Lys	Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Asn	Gln	Leu	Ala
	915						920					925			
Val	Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met
	930					935					940				
Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Pro	Val	Arg	Leu	Pro	Asn	Glu	Ile
945					950					955					960
Phe	Met	Gln	Gly	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala
				965					970					975	
Val	Thr	Leu	Thr	Pro	Lys	Leu	Glu	Glu	Leu	Val	Asp	Gln	Leu	Ala	Glu
			980					985					990		
Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr
			995				1000						1005		
Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu	
	1010					1015					1020				
Val	Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg	
	1025					1030					1035				
Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr	
	1040					1045					1050				
Val	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gly	Thr	Glu	Ala	Leu	Leu	Ala	
	1055					1060					1065				
Glu	Ala	Gln	Arg	Leu	Lys	Phe	Ala	Gly	Phe	Arg	Thr	Tyr	Arg	Val	
	1070					1075					1080				
Glu	Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe	
	1085					1090					1095				
Glu	Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala	
	1100					1105					1110				
Asp	Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp	
	1115					1120					1125				
Ala	Phe	Asp	Gly	His	Asn	Val	Thr	Lys	Met	His	Ala	Gly	Ser	Ile	
	1130					1135					1140				
Glu	His	Phe	Gly	Val	Arg	Tyr	Glu	Ala	Gly	Asp	Val	Ile	Gly	Cys	
	1145					1150					1155				
Phe	Ile	Asp	Val	Lys	Glu	Gln	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly	
	1160					1165					1170				
Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp	
	1175					1180					1185				
Val	Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	
	1190					1195					1200				
Val	Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	

1205		1210		1215
Leu Lys Phe Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr Glu Pro				
1220		1225		1230
Phe Cys Val Asn Met Arg Arg Pro Val Thr His Trp Tyr Thr Lys				
1235		1240		1245
Asp Gln Pro Ile Phe Glu Asn Thr Glu Glu Met Pro Asp Cys Arg				
1250		1255		1260
Ile Asp Val Thr Arg Ile Pro Gly Gly Ala Asp Thr Pro Pro His				
1265		1270		1275
Leu Lys Ile Ser His Asn Thr Phe Glu Thr Met Glu Lys Ala Asn				
1280		1285		1290
Trp Glu Phe Leu Arg Leu Ser Leu Pro Val Thr Cys Met Gly Glu				
1295		1300		1305
Phe Ile Ser Glu Gln Glu Lys Ala Arg Arg Trp Asp Glu Ile Lys				
1310		1315		1320
Asn Arg Gln Tyr Arg Leu Met Arg Glu Ala Glu Ile Ala Ala Gln				
1325		1330		1335
Met Gln Val Gln Thr Gln Ala Ala His Met Asp His Met Leu Lys				
1340		1345		1350
Gly Gly Phe Asn Met Asn Asp Ile Lys Gly Leu Thr Arg Asn Phe				
1355		1360		1365
Asp Glu His Ala Asp Ala Glu Ala Asp His Met Met Arg Gly Pro				
1370		1375		1380
Asn Arg Pro Pro Arg Lys Gly Ser Leu Thr Arg Asn Ile Thr Phe				
1385		1390		1395
Glu Thr Asp Met Ser Ala Ala Leu Asp Glu Met Gln Arg Ser Thr				
1400		1405		1410
Ser Val Leu Asp Met Asn Gly Leu Gly Glu Glu Met Asp Asp Lys				
1415		1420		1425
Lys Lys Arg Gly Arg Ser Pro Phe Lys Phe Phe Ser Lys Lys Ser				
1430		1435		1440
Arg Asp Gln Ser Arg Glu Lys Met Gly Ala Arg Thr Leu Asp Thr				
1445		1450		1455
Ser Leu Glu Arg Arg Asn Thr Val Ala His Gly Arg Asn Val Val				
1460		1465		1470
Asn Gln Gln Met Thr Thr Arg Ala Pro Thr Leu Arg Leu Asn Asn				
1475		1480		1485
Ala Glu Ile Pro Pro Ser Pro Val Pro Gln Gly Pro Lys Gln Leu				
1490		1495		1500
Ser Gly Ser Asn Leu Gly Gln Gln Pro Val Glu Thr Ser Gly Asp				

1505	1510	1515
Glu Met Phe Asp Ala Glu Cys Leu Lys Leu Ile Asn Glu Tyr Phe 1520 1525 1530		
Tyr Gly Val Arg Ile Phe Pro Gly Gln Asp Pro Thr His Val Tyr 1535 1540 1545		
Val Gly Trp Val Thr Thr Gln Tyr His Leu His Ser Arg Glu Phe 1550 1555 1560		
Asn Lys Asn Lys Val Arg Arg Gly Ser Val Tyr Ile Glu Asp Asp 1565 1570 1575		
Tyr Glu Met Ala Ile Glu Arg Ile Asp Arg Gln Ser Cys Tyr Val 1580 1585 1590		
Val Arg Ala Asp Glu Leu Phe Asn Glu Val Thr Gln Asp Ala Ser 1595 1600 1605		
Gly Lys Gly Ala Ser Gln Gly Met Phe Val Gly Cys Phe Val Asp 1610 1615 1620		
Thr Ala Thr Gly Ile Ile Arg Phe Thr Cys Glu Gly Lys Asp Thr 1625 1630 1635		
Ser His Arg Trp Met Met Glu Pro Asp Thr Lys Leu Phe Pro Ala 1640 1645 1650		
Ile Phe Val Glu Ala Thr Ser Lys Glu Ile Leu Gln Ile Glu Leu 1655 1660 1665		
Gly Arg Thr Pro Thr Thr Leu Pro Leu Ser Ala Ala Val Leu Pro 1670 1675 1680		
Thr Ser Asp Lys His Ile Asn Pro Gln Ser Pro Pro Arg Leu Lys 1685 1690 1695		
Val Gln Cys Leu Arg Pro His Gln Trp Ala Arg Val Pro Asn Thr 1700 1705 1710		
Ala Leu Gln Val His Ala Leu Lys Leu Ser Asp Val Arg Gly Trp 1715 1720 1725		
Ser Met Leu Cys Glu Asp Pro Val Ser Met Leu Ala Leu His Ile 1730 1735 1740		
Pro Glu Glu Asp Arg Cys Ile Asp Ile Leu Glu Leu Ile Glu Met 1745 1750 1755		
Asp Lys Leu Leu Ser Phe His Ala His Ser Leu Thr Leu Tyr Ala 1760 1765 1770		
Ala Leu Cys Tyr Gln Ser Asn Tyr Arg Ala Ala His Ala Leu Cys 1775 1780 1785		
Gln His Val Asp Gln Lys Gln Leu Leu Tyr Ala Ile Arg Ser Glu 1790 1795 1800		
Tyr Met Ser Gly Pro Leu Arg Gln Gly Phe Tyr Asp Leu Leu Ile		



1805	1810	1815
Ala Leu His Leu Glu Ser His 1820	Ala Thr Thr Met 1825	Glu Val Cys Lys 1830
Asn Glu Tyr Ile Thr Pro Leu 1835	Gly Ala Glu Leu 1840	Lys Glu Leu Tyr 1845
Ser Asp Glu Glu Met Gln His 1850	Ser Leu Arg Ser 1855	Leu Val Thr Glu 1860
Ser Val Arg Pro Gln Leu Arg 1865	Met Thr Glu Ile 1870	Thr Glu Pro Ile 1875
Pro Asp Ile Asp Gln Leu Tyr 1880	Ser Pro Lys Phe 1885	Pro Leu Glu Val 1890
Val Arg Gln Phe Val Met Glu 1895	Ala Leu Lys Asp 1900	Ala Val Glu Ile 1905
Asn Gln Val His Asn Arg Asp 1910	Pro Ile Gly Trp 1915	Thr Asn Glu Asn 1920
Leu Phe Leu Pro Leu Ile Lys 1925	Leu Thr Asp Arg 1930	Leu Leu Leu Val 1935
Gly Val Leu Thr Asp Glu Asp 1940	Val Gln Arg Leu 1945	Leu Val Met Ile 1950
Asp Pro Glu Thr Trp Asp Gln 1955	Ala Phe Glu Arg 1960	Glu Gly Lys Asp 1965
Glu His Arg Lys Gly Leu Leu 1970	Thr Met Lys Met 1975	Ala Glu Gly Ala 1980
Lys Leu Gln Met Cys Tyr Leu 1985	Leu His His Leu 1990	Tyr Asp Thr Gln 1995
Leu Arg His Arg Val Glu Ser 2000	Ile Ile Ala Phe 2005	Ser His Asp Phe 2010
Val Gly Asp Leu Gln Thr Asp 2015	Gln Leu Arg Arg 2020	Tyr Ile Glu Ile 2025
Lys Gln Ser Asp Leu Pro Ser 2030	Ala Val Ala Ala 2035	Lys Lys Thr Lys 2040
Glu Phe Arg Cys Pro Pro Arg 2045	Glu Gln Met Asn 2050	Gln Ile Leu Cys 2055
Phe Lys Asn Leu Glu Pro Asp 2060	Asp Gln Asp Asn 2065	Cys Thr Cys Gly 2070
Leu Glu Leu Arg Gly Arg Leu 2075	Gly Asp Phe His 2080	Asp Ser Leu Met 2085
Gln Lys Val Ser Leu Asn Ala 2090	Leu Gln Glu Pro 2095	Asp Gly Val Glu 2100
Gly Thr Ala Ile Glu Glu Val	Lys Thr Gly Pro	Ile Thr Lys Ile

2105	2110	2115
Tyr Asn Phe Ile Asn Thr Val	Lys Glu Leu Glu Glu	Gly Pro Lys
2120	2125	2130
Glu Val Glu Glu Pro Glu Lys	Lys Thr Pro Glu Glu	Val Phe Arg
2135	2140	2145
Lys Val Leu Ile Lys Thr Ile	Val Ser Trp Ala Glu	Glu Ser Gln
2150	2155	2160
Ile Glu Asn Pro Lys Leu Val	Arg Glu Met Phe Ser	Leu Leu Leu
2165	2170	2175
Arg Gln Tyr Asp Thr Val Gly	Glu Leu Val Arg Ala	Leu Glu Lys
2180	2185	2190
Thr Tyr Val Ile Asn Thr Arg	Ala Arg Asp Asp Val	Ala Glu Met
2195	2200	2205
Trp Val Gly Leu Ser Gln Ile	Arg Ala Leu Leu Pro	Val Gln Met
2210	2215	2220
Ser Gln Glu Glu Glu Glu Leu	Met Arg Lys Arg Leu	Trp Lys Leu
2225	2230	2235
Val Asn Asn Ala Thr Phe Phe	Gln His Pro Asp Leu	Ile Arg Ile
2240	2245	2250
Leu Arg Val His Glu Asn Val	Met Ala Val Met Met	Asn Thr Leu
2255	2260	2265
Gly Arg Arg Ala Gln Ala Gln	Ser Asp Ala Pro Thr	Gln Ser Glu
2270	2275	2280
Val Ala Glu Gly Ala Pro Ser	Lys Glu Lys Asp Thr	Ser His Glu
2285	2290	2295
Met Val Val Ala Cys Cys Arg	Phe Leu Cys Tyr Phe	Cys Arg Thr
2300	2305	2310
Gly Arg Gln Asn Gln Lys Ala	Met Phe Asp His Phe	Asp Phe Leu
2315	2320	2325
Leu Asp Asn Ala Asn Ile Leu	Leu Ala Arg Pro Ser	Leu Arg Gly
2330	2335	2340
Ser Thr Pro Leu Asp Val Ala	Tyr Ser Ser Leu Met	Glu Asn Thr
2345	2350	2355
Glu Leu Ala Leu Ala Leu Arg	Glu His Tyr Leu Glu	Lys Ile Ala
2360	2365	2370
Val Tyr Leu Ser Arg Cys Gly	Leu Gln Ser Asn Ser	Glu Leu Val
2375	2380	2385
Glu Lys Gly Tyr Pro Asp Leu	Gly Trp Asp Pro Val	Glu Gly Glu
2390	2395	2400
Arg Tyr Leu Asp Phe Leu Arg	Tyr Cys Val Trp Val	Asn Gly Glu

2405	2410	2415
Ser Val Glu Glu Asn Ala Asn 2420	Leu Val Ile Arg 2425	Leu Leu Ile Arg 2430
Arg Pro Glu Cys Leu Gly 2435	Ala Leu Arg Gly 2440	Glu Gly Glu Gly 2445
Leu Phe Arg Ala Ile Val 2450	Glu Ala Asn Arg Met 2455	Ser Glu Arg Ile 2460
Ser Asp Arg Cys Lys Met 2465	Gln Asp Glu Ala Glu 2470	Gly Thr Ile Ala 2475
Gly Leu Asn Phe Thr His 2480	Pro Leu Pro Glu Gly 2485	Glu Glu Asp Glu 2490
Asp Tyr Ile Asp Thr Gly 2495	Ala Ala Ile Leu Asn 2500	Phe Tyr Cys Thr 2505
Leu Val Asp Leu Leu Gly 2510	Arg Cys Ala Pro Asp 2515	Ala Ser Val Ile 2520
Glu Gln Gly Lys Asn Glu 2525	Ser Leu Arg Ala Arg 2530	Ala Ile Leu Arg 2535
Ser Leu Val Pro Leu Glu 2540	Asp Leu Gln Gly Val 2545	Leu Ser Leu Lys 2550
Phe Thr Leu Ser Gln Thr 2555	Ala Pro Gly Glu Glu 2560	Lys Pro Lys Ser 2565
Asp Met Pro Ser Gly Leu 2570	Leu Pro Asn Asn Lys 2575	Gln Ser Ile Val 2580
Leu Phe Leu Glu Arg Val 2585	Tyr Gly Ile Glu Ala 2590	Gln Asp Leu Phe 2595
Tyr Arg Leu Leu Glu Asp 2600	Ala Phe Leu Pro Asp 2605	Leu Arg Thr Ala 2610
Thr Ile Leu Asp Lys Ser 2615	Asp Gly Ser Glu Ser 2620	Asp Met Ala Leu 2625
Ala Met Asn Arg Tyr Ile 2630	Gly Asn Ser Ile Leu 2635	Pro Leu Leu Ile 2640
Lys His Ser Lys Phe Tyr 2645	Asn Glu Ala Glu Asn 2650	Tyr Ala Ser Leu 2655
Leu Asp Ala Thr Leu His 2660	Thr Val Tyr Arg Leu 2665	Ser Lys Asn Arg 2670
Met Leu Thr Lys Gly Gln 2675	Arg Glu Ala Val Ser 2680	Asp Phe Leu Val 2685
Ala Leu Thr Ser Gln Met 2690	Gln Pro Ala Met Leu 2695	Leu Lys Leu Leu 2700
Arg Lys Leu Thr Val Asp Val	Ser Lys Leu Ser Glu	Tyr Thr Thr

2705	2710	2715
Val Ala Leu Arg Leu Leu Thr 2720	Leu His Phe Asp Arg 2725	Cys Ala Lys 2730
Tyr Tyr Gly Ser Thr Gln Gly 2735	Gln Gly Ser Tyr Gly 2740	Ala Ser Ser 2745
Asp Glu Glu Lys Arg Leu Thr 2750	Met Leu Leu Phe Ser 2755	Asn Ile Phe 2760
Asp Ser Leu Ser Asn Met Asp 2765	Tyr Asp Pro Glu Leu 2770	Phe Gly Lys 2775
Ala Leu Pro Cys Leu Ile Ala 2780	Ile Gly Cys Ala Leu 2785	Pro Pro Asp 2790
Tyr Ser Leu Ser Lys Asn Thr 2795	Asp Glu Asp Tyr Tyr 2800	Gly Arg Gln 2805
Met Gly Ala Pro Asp Gln Pro 2810	Gln Tyr Met Pro Asn 2815	Pro Ile Asp 2820
Thr Asn Asn Val His Leu Asp 2825	Asn Asp Leu Asn Ser 2830	Leu Val Gln 2835
Lys Phe Ser Glu His Tyr His 2840	Asp Ala Trp Ala Ser 2845	Arg Arg Leu 2850
Glu Gly Gly Trp Thr Tyr Gly 2855	Asp Ile Arg Ser Asp 2860	Asn Asp Arg 2865
Lys His Pro Arg Leu Lys Pro 2870	Tyr Asn Met Leu Ser 2875	Glu Tyr Glu 2880
Arg Glu Arg Tyr Arg Asp Pro 2885	Val Arg Glu Cys Leu 2890	Lys Gly Leu 2895
Leu Ala Ile Gly Trp Thr Val 2900	Glu His Ser Glu Val 2905	Glu Val Ala 2910
Leu Asn His Arg Gly Ser Thr 2915	Arg Arg Gln Ser Lys 2920	Pro Gln Ile 2925
Asn Glu Phe Gln Asn Glu Gly 2930	Ser Pro Phe Asn Tyr 2935	Asn Pro His 2940
Pro Val Asp Met Ser Asn Leu 2945	Thr Leu Ser Arg Glu 2950	Met Gln Asn 2955
Met Ala Glu Arg Leu Ala Glu 2960	Asn Ser His Asp Ile 2965	Trp Ala Lys 2970
Lys Lys Asn Glu Glu Leu Asn 2975	Gly Cys Gly Gly Val 2980	Ile His Pro 2985
Gln Leu Val Pro Tyr Asp Leu 2990	Leu Thr Asp Lys Glu 2995	Lys Lys Lys 3000
Asp Arg Glu Arg Ser Gln Glu	Phe Leu Lys Tyr Met	Gln Tyr Gln

3005				3010				3015			
Gly Tyr	Lys Leu His	Lys Pro	Ser Lys Gly Gly	Ala Val Glu Glu							
3020		3025		3030							
Gly Gly	Ala Thr Gln Ala	Ala Val Glu Leu Arg	Phe Ser Tyr Ser								
3035		3040	3045								
Leu Leu	Glu Lys Leu Ile	Gln Tyr Leu Asp Arg	Ala Thr Ile Asn								
3050		3055	3060								
Met Lys	Leu Leu Lys Pro	Ser Thr Thr Phe Ser	Arg Arg Ser Ser								
3065		3070	3075								
Phe Lys	Thr Ala Thr Arg	Asp Ile Lys Phe Phe	Ser Lys Val Val								
3080		3085	3090								
Leu Pro	Leu Met Glu Lys	Tyr Phe Ser Thr His	Arg Asn Tyr Phe								
3095		3100	3105								
Ile Ala	Ile Ala Thr Ala	Thr Asn Asn Ile Gly	Ala Ala Ser Leu								
3110		3115	3120								
Lys Glu	Lys Glu Met Val	Ala Ser Ile Phe Cys	Lys Leu Ala Ala								
3125		3130	3135								
Leu Leu	Arg Asn Arg Leu	Ser Ala Phe Gly Pro	Asp Val Arg Ile								
3140		3145	3150								
Thr Val	Arg Cys Leu Gln	Val Leu Val Lys Gly	Ile Asp Ala Arg								
3155		3160	3165								
Thr Leu	Thr Lys Asn Cys	Pro Glu Phe Ile Arg	Thr Ser Met Leu								
3170		3175	3180								
Thr Phe	Phe Asn Gln Thr	Ser Asp Asp Leu Gly	Asn Thr Ile Leu								
3185		3190	3195								
Asn Leu	Gln Asp Gly Lys	Tyr Ser His Leu Arg	Gly Thr His Leu								
3200		3205	3210								
Lys Thr	Ser Thr Ser Leu	Gly Tyr Val Asn Gln	Val Val Leu Pro								
3215		3220	3225								
Val Leu	Thr Ala Met Phe	Asp His Leu Ala Ala	Cys Asp Tyr Gly								
3230		3235	3240								
Ser Asp	Leu Leu Leu Asp	Glu Ile Gln Val Ala	Ser Tyr Lys Ile								
3245		3250	3255								
Leu Ala	Ala Leu Tyr His	Leu Gly Thr Asp Gly	Thr Leu Thr His								
3260		3265	3270								
Asp Arg	Lys Tyr Leu Lys	Thr Glu Ile Glu Arg	His Arg Pro Ala								
3275		3280	3285								
Leu Gly	Ser Cys Leu Gly	Ala Tyr Ser Ser Cys	Phe Pro Val Ala								
3290		3295	3300								
Phe Leu	Glu Pro His Leu	Asn Lys His Asn Gln	Tyr Ser Leu Leu								

3305				3310				3315			
Asn Arg	Ile Ala	Asp His	Ser	Leu Glu	Ala Gln	Asp	Ile Met	Val			
3320			3325			3330					
Lys Met	Glu Ser	Cys Met	Pro	Asn Leu	Glu Thr	Ile	Leu Ala	Glu			
3335			3340			3345					
Val Asp	Gln Phe	Val Glu	Ser	Asp Lys	Thr Tyr	Asn	Asp Ala	Pro			
3350			3355			3360					
His Ile	Ile Asp	Val Ile	Leu	Pro Leu	Leu Cys	Ala	Tyr Leu	Pro			
3365			3370			3375					
Phe Trp	Trp Ser	Gln Gly	Pro	Asp Asn	Val Ser	Pro	Thr Ser	Gly			
3380			3385			3390					
Asn His	Val Thr	Met Val	Thr	Ala Asp	His Met	Asn	Pro Leu	Leu			
3395			3400			3405					
Arg Asn	Val Leu	Lys Met	Ile	Lys Lys	Asn Ile	Gly	Asn Asp	Asn			
3410			3415			3420					
Ala Pro	Trp Met	Thr Arg	Ile	Ala Ala	Tyr Thr	Gln	Gln Ile	Ile			
3425			3430			3435					
Ile Asn	Thr Ser	Glu Glu	Leu	Leu Lys	Asp Pro	Phe	Leu Pro	Leu			
3440			3445			3450					
Ala Glu	Arg Val	Lys Lys	Arg	Thr Glu	Asn Met	Leu	His Lys	Glu			
3455			3460			3465					
Asp Ser	Met Arg	Gly Phe	Ile	Lys Ser	Ala Thr	Asp	Asp Thr	Ser			
3470			3475			3480					
Gln Val	Glu Thr	Gln Leu	Gln	Glu Asp	Trp Asn	Leu	Leu Val	Arg			
3485			3490			3495					
Asp Ile	Tyr Ser	Phe Tyr	Pro	Leu Leu	Ile Lys	Tyr	Val Asp	Leu			
3500			3505			3510					
Gln Arg	Asn His	Trp Leu	Lys	Asp Asn	Ile Pro	Glu	Ala Glu	Glu			
3515			3520			3525					
Leu Tyr	Asn His	Val Ala	Glu	Ile Phe	Asn Ile	Trp	Ser Lys	Ser			
3530			3535			3540					
Gln Tyr	Phe Leu	Lys Glu	Glu	Gln Asn	Phe Ile	Ser	Ala Asn	Glu			
3545			3550			3555					
Ile Asp	Asn Met	Ala Leu	Ile	Met Pro	Thr Ala	Thr	Arg Arg	Ser			
3560			3565			3570					
Ala Ile	Ser Glu	Gly Ala	Pro	Ala Val	Gly Gly	Lys	Val Lys	Lys			
3575			3580			3585					
Lys Lys	Lys Asn	Arg Asp	Lys	Lys Arg	Asp Lys	Asp	Lys Glu	Val			
3590			3595			3600					
Gln Ala	Ser Leu	Met Val	Ala	Cys Leu	Lys Arg	Leu	Leu Pro	Val			

3605		3610		3615
Gly Leu Asn Leu Phe Ala	Gly Arg Glu Gln Glu	Leu Val Gln His		
3620	3625	3630		
Cys Lys Asp Arg Tyr Leu	Lys Lys Met Pro Glu	Tyr Asp Val Ile		
3635	3640	3645		
Glu Phe Ala Arg Asn Gln	Leu Thr Leu Pro Asp	Lys Leu Asp Pro		
3650	3655	3660		
Ser Asp Glu Met Ser Trp	Gln His Tyr Leu Tyr	Ser Lys Leu Gly		
3665	3670	3675		
Lys Thr Glu Glu Pro Val	Asp Glu Gln Ala Leu	Glu Lys Ala Asn		
3680	3685	3690		
Val Asn Ser Asn Glu Lys	Gly Lys Asp Lys Thr	Gln Glu Thr Val		
3695	3700	3705		
Asp Arg Ile Val Ala Met	Ala Lys Val Leu Phe	Gly Leu His Met		
3710	3715	3720		
Ile Asp His Pro Gln Gln	Gln Ser Lys Asn Val	Tyr Arg Ser Val		
3725	3730	3735		
Val Ser Ile Gln Arg Lys	Arg Ala Val Ile Ala	Cys Phe Arg Gln		
3740	3745	3750		
Thr Ser Leu His Ser Leu	Pro Arg His Arg Ala	Cys Asn Ile Phe		
3755	3760	3765		
Ala Arg Ser Tyr Tyr Glu	Gln Trp Leu Gln Glu	Glu Asn Val Gly		
3770	3775	3780		
Gln Glu Val Met Val Glu	Asp Leu Thr Gln Thr	Phe Glu Asp Ser		
3785	3790	3795		
Glu Lys Ser Lys Lys Glu	Gly Glu Glu Thr Asp	Ser Lys Pro Asp		
3800	3805	3810		
Pro Leu Thr Gln Leu Val	Thr Thr Phe Cys Arg	Gly Ala Met Thr		
3815	3820	3825		
Glu Arg Ser Gly Ala Leu	Gln Glu Asp Leu Leu	Tyr Met Ser Tyr		
3830	3835	3840		
Ala Gln Ile Ala Ala Lys	Ser Thr Gly Lys Glu	Glu Glu Glu Gly		
3845	3850	3855		
Gly Asp Glu Glu Gly Gly	Glu Gly Gly Glu Glu	Gly Glu Gly Thr		
3860	3865	3870		
Ser Ile His Glu Gln Glu	Met Glu Lys Gln Lys	Leu Leu Phe His		
3875	3880	3885		
Gln Ala Arg Leu Ser Asn	Arg Gly Val Ala Glu	Met Val Leu Leu		
3890	3895	3900		
His Ile Ser Ala Ser Lys	Gly Ile Pro Ser Glu	Met Val Met Thr		

3905		3910		3915
Thr Leu Asn Leu Gly Ile	Ala Ile Leu Arg Gly	Gly Asn Ile Asp		
3920	3925	3930		
Ile Gln Met Gly Met Leu	Asn His Leu Lys Glu	Lys Lys Asp Val		
3935	3940	3945		
Gly Phe Phe Thr Ser Ile	Ala Gly Leu Met Asn	Ser Cys Ser Val		
3950	3955	3960		
Leu Asp Leu Asp Ala Phe	Glu Arg Asn Thr Lys	Ala Glu Gly Leu		
3965	3970	3975		
Gly Val Gly Ser Glu Gly	Ala Ala Gly Glu Lys	Asn Met His Asp		
3980	3985	3990		
Ala Glu Phe Thr Cys Ala	Leu Phe Arg Phe Ile	Gln Leu Thr Cys		
3995	4000	4005		
Glu Gly His Asn Leu Glu	Trp Gln Asn Tyr Leu	Arg Thr Gln Ala		
4010	4015	4020		
Gly Asn Thr Thr Thr Val	Asn Val Val Ile Cys	Thr Val Asp Tyr		
4025	4030	4035		
Leu Leu Arg Leu Gln Glu	Ser Ile Met Asp Phe	Tyr Trp His Tyr		
4040	4045	4050		
Ser Ser Lys Glu Ile Ile	Asp Pro Ala Gly Lys	Ala Asn Phe Phe		
4055	4060	4065		
Lys Ala Ile Glu Val Ala	Ser Gln Val Phe Asn	Thr Leu Thr Glu		
4070	4075	4080		
Val Ile Gln Gly Pro Cys	Thr Leu Asn Gln Gln	Ala Leu Ala His		
4085	4090	4095		
Ser Arg Leu Trp Asp Ala	Val Gly Gly Phe Leu	Phe Leu Phe Ser		
4100	4105	4110		
His Met Gln Asp Lys Leu	Ser Lys His Ser Ser	Gln Val Asp Leu		
4115	4120	4125		
Leu Lys Glu Leu Leu Asn	Leu Gln Lys Asp Met	Ile Thr Met Met		
4130	4135	4140		
Leu Ser Met Leu Glu Gly	Asn Val Val Asn Gly	Thr Ile Gly Lys		
4145	4150	4155		
Gln Met Val Asp Thr Leu	Val Glu Ser Ala Ser	Asn Val Glu Leu		
4160	4165	4170		
Ile Leu Lys Tyr Phe Asp	Met Phe Leu Lys Leu	Ala Asp Leu Ile		
4175	4180	4185		
Glu Ser Pro Ser Phe His	Glu Val Asp Met Lys	Asn Glu Gly Trp		
4190	4195	4200		
Val Thr Pro Lys Asp Phe	Arg Glu Lys Met Glu	Gln Ser Lys Asn		



4205		4210		4215
Tyr Thr Pro Glu Glu Met Asp Phe Leu Leu Ala Cys Cys Glu Arg				
4220		4225		4230
Asn His Glu Gly Lys Ile Asp Tyr Arg Ala Phe Val Glu His Phe				
4235		4240		4245
His Glu Pro Ser Lys Glu Ile Gly Phe Asn Leu Ala Val Leu Leu				
4250		4255		4260
Thr Asn Leu Ser Glu His Met Pro Asn Glu Pro Arg Leu Ala Arg				
4265		4270		4275
Phe Leu Glu Thr Ala Gly Ser Val Leu Asn Tyr Phe Glu Pro Phe				
4280		4285		4290
Leu Gly Arg Ile Glu Ile Leu Gly Ser Ser Lys Arg Ile Glu Arg				
4295		4300		4305
Val Tyr Phe Glu Ile Lys Asp Ser Asn Ile Glu Gln Trp Glu Lys				
4310		4315		4320
Pro Gln Ile Arg Glu Ser Lys Arg Ala Phe Phe Tyr Ser Ile Val				
4325		4330		4335
Thr Glu Gly Gly Asp Lys Glu Lys Leu Glu Ala Phe Val Asn Phe				
4340		4345		4350
Cys Glu Asp Ala Ile Phe Glu Met Thr His Ala Ser Gly Leu Met				
4355		4360		4365
Ala Thr Asp Asp Gly Gly Gly Asn Val Lys Arg Asp Thr Ala Tyr				
4370		4375		4380
Ser Ser Tyr Met Ser Glu Glu Glu Glu Glu Arg Ala Ala Arg Asp				
4385		4390		4395
Pro Ile Arg Arg Thr Ile Thr Ala Val Lys Glu Gly Leu Lys Phe				
4400		4405		4410
Gly Val His Met Leu Ser Pro Ala Asn Ile Lys His Gln Ile Gly				
4415		4420		4425
Val Met Gln Thr Lys Ser Ile Pro Glu Leu Ile Val Gly Phe Phe				
4430		4435		4440
Lys Ile Ile Phe Tyr Ile Phe Tyr Tyr Thr Gly Tyr Ala His Phe				
4445		4450		4455
Cys Val Val Arg Tyr Ile Phe Gly Ile Leu Leu Asn Leu Met Arg				
4460		4465		4470
Gly Pro Ala Pro Glu Gln Glu Glu Glu Pro Val Val Glu Glu Glu				
4475		4480		4485
Thr Phe Gly Arg Ala Leu Pro Pro Leu Pro Leu Glu Glu Pro Pro				
4490		4495		4500
Gly Thr Val Gln Ala Phe Gly Leu Asp Ile Asn Lys Glu Glu Asn				

4505	4510	4515
Gly Met Tyr Lys Val Val Val	His Glu Ser Pro	Ala Asn Ser Ser
4520	4525	4530
Met Glu Glu Gly Gly Glu Ser	Ser Pro Glu Asp	Gly Ala Ala Ala
4535	4540	4545
Ser Gly Glu Leu Val Glu Gly	Glu Pro His Gln	Glu Pro Ile Ser
4550	4555	4560
Ile Val Asp Leu Leu Gly Gly	Glu Ala Ala Lys	Lys Ala Ala Gln
4565	4570	4575
Glu Arg Gln Glu Ala Gln Lys	Ala Gln Glu Ala	Ala Met Ala Ser
4580	4585	4590
Ile Glu Ala Glu Ala Lys Lys	Ser Ser Ser Ala	Pro Gln Glu Thr
4595	4600	4605
Pro Ala Val His Gln Ile Asp	Phe Ser Gln Tyr	Thr His Arg Ala
4610	4615	4620
Val Ser Phe Leu Ala Arg Asn	Phe Tyr Asn Leu	Lys Tyr Val Ala
4625	4630	4635
Leu Val Leu Ala Phe Ser Ile	Asn Phe Met Leu	Leu Phe Tyr Lys
4640	4645	4650
Val Thr Ser Phe Thr Glu Glu	Ala Asp Ser Ser	Ala Glu Glu Glu
4655	4660	4665
Leu Ile Leu Gly Ser Gly Ser	Gly Gly Gly Ala	Asp Ile Thr Gly
4670	4675	4680
Ser Gly Phe Gly Gly Ser Gly	Asp Gly Gly Ser	Gly Asp Gly Glu
4685	4690	4695
Met Glu Asp Glu Ile Pro Glu	Leu Val His Val	Asp Glu Asp Phe
4700	4705	4710
Phe Tyr Met Glu His Val Leu	Arg Ile Ala Ala	Cys Leu His Ser
4715	4720	4725
Leu Val Ser Leu Ala Met Leu	Ile Ala Tyr Tyr	His Leu Lys Val
4730	4735	4740
Pro Leu Ala Ile Phe Lys Arg	Glu Lys Glu Ile	Ala Arg Arg Leu
4745	4750	4755
Glu Phe Glu Gly Leu Phe Ile	Ala Glu Gln Pro	Glu Asp Asp Asp
4760	4765	4770
Phe Lys Ser His Trp Asp Lys	Leu Val Ile Ser	Ala Lys Ser Phe
4775	4780	4785
Pro Val Asn Tyr Trp Asp Lys	Phe Val Lys Lys	Lys Val Arg Gln
4790	4795	4800
Lys Tyr Ser Glu Thr Tyr Asp	Phe Asp Ser Ile	Ser Asn Leu Leu

4805		4810		4815
Gly Met	Glu Lys Ser Thr	Phe	Ala Ala Gln Glu	Ser Glu Glu Thr
4820		4825		4830
Gly Ile	Phe Lys Tyr Ile	Met	Asn Ile Asp Trp	Arg Tyr Gln Val
4835		4840		4845
Trp Lys	Ala Gly Val Thr	Phe	Thr Asp Asn Ala	Phe Leu Tyr Ser
4850		4855		4860
Leu Trp	Tyr Phe Ser Phe	Ser	Val Met Gly Asn	Phe Asn Asn Phe
4865		4870		4875
Phe Phe	Ala Ala His Leu	Leu	Asp Val Ala Val	Gly Phe Lys Thr
4880		4885		4890
Leu Arg	Thr Ile Leu Gln	Ser	Val Thr His Asn	Gly Lys Gln Leu
4895		4900		4905
Val Leu	Thr Val Met Leu	Leu	Thr Ile Ile Val	Tyr Ile Tyr Thr
4910		4915		4920
Val Ile	Ala Phe Asn Phe	Phe	Arg Lys Phe Tyr	Ile Gln Glu Glu
4925		4930		4935
Asp Glu	Glu Val Asp Lys	Lys	Cys His Asp Met	Leu Thr Cys Phe
4940		4945		4950
Val Phe	His Leu Tyr Lys	Gly	Val Arg Ala Gly	Gly Gly Ile Gly
4955		4960		4965
Asp Glu	Ile Gly Asp Pro	Asp	Gly Asp Asp Tyr	Glu Val Tyr Arg
4970		4975		4980
Ile Ile	Phe Asp Ile Thr	Phe	Phe Phe Phe Val	Ile Ile Ile Leu
4985		4990		4995
Leu Ala	Ile Ile Gln Gly	Leu	Ile Ile Asp Ala	Phe Gly Glu Leu
5000		5005		5010
Arg Asp	Gln Leu Glu Ser	Val	Lys Asp Asn Met	Glu Ser Asn Cys
5015		5020		5025
Phe Ile	Cys Gly Met Gly	Lys	Asp Phe Phe Asp	Ile Val Pro His
5030		5035		5040
Gly Phe	Asp Thr His Val	Gln	Lys Glu His Asn	Leu Ala Asn Tyr
5045		5050		5055
Met Phe	Phe Leu Met His	Leu	Ile Asn Lys Pro	Asp Thr Glu Tyr
5060		5065		5070
Thr Gly	Gln Glu Thr Tyr	Val	Trp Asn Met Tyr	Gln Gln Arg Ser
5075		5080		5085
Trp Asp	Phe Phe Pro Val	Gly	Asp Cys Phe Arg	Lys Gln Tyr Glu
5090		5095		5100
Asp Glu	Leu Ser Gly Gly	Gly	Gly Gly Gly	

5105

5110

<210> 122  
 <211> 5127  
 <212> PRT  
 <213> *Drosophila melanogaster*

<220>  
 <223> gi 17352469

<400> 122  
 Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15  
 Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255

Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe	
			260					265					270			
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg	
		275					280					285				
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu	
	290					295					300					
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Cys	Leu	Arg	Gln	Glu	Lys	Asp	
305					310					315					320	
Asp	Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	
				325					330					335		
Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	
			340					345					350			
Thr	Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	
		355					360					365				
Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	
	370					375					380					
Met	Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	
385					390					395					400	
Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	
				405					410					415		
Thr	Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	
			420					425					430			
Gln	Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	
		435					440					445				
Asn	Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	
	450					455					460					
Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	
465					470					475					480	
Gly	Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	
				485					490					495		
Thr	Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	
			500					505					510			
Gln	Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	
		515					520					525				
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn	
		530				535					540					
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	
545					550					555					560	
Gly	Ser	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro	
				565					570					575		

Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser	
			580					585					590			
Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys	
		595					600					605				
Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn	
	610					615					620					
Ile	Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu	
625					630					635					640	
Leu	Val	Asp	His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg	
				645					650					655		
Val	Asp	Gly	Ser	Ser	Met	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met	
			660					665					670			
Asp	His	Ile	Glu	Gln	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	Gly	
		675					680					685				
Trp	Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys	
	690					695					700					
Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp	
705				710					715						720	
Gly	Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala	
			725						730					735		
Leu	Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala	
		740						745				750				
Ile	Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys	
	755						760					765				
Val	Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	
	770					775					780					
Val	Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly	
785					790					795					800	
Asp	His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu	
				805					810					815		
Val	Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe	
			820					825					830			
Tyr	Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile	
		835					840					845				
Glu	Asp	Asp	Thr	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Thr	Gly	Val	
	850					855					860					
Thr	Leu	Pro	Ser	Ser	Val	Asp	Gln	Ile	Lys	Glu	Lys	Leu	Ala	Glu	Asn	
865					870					875					880	
Ile	His	Glu	Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Ser	Trp	
				885					890					895		

Gly	Glu	His	Arg	Asp	Asp	Tyr	His	Arg	Ile	His	Pro	Cys	Leu	Thr	His		
			900					905					910				
Phe	Glu	Lys	Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Asn	Gln	Leu	Ala		
		915					920					925					
Val	Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met		
		930				935					940						
Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Pro	Val	Arg	Leu	Pro	Asn	Glu	Ile		
945					950					955				960			
Phe	Met	Gln	Gly	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala		
				965					970					975			
Val	Thr	Leu	Thr	Pro	Lys	Leu	Glu	Glu	Leu	Val	Asp	Gln	Leu	Ala	Glu		
			980					985					990				
Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr		
		995					1000					1005					
Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu			
1010						1015					1020						
Val	Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg			
1025						1030					1035						
Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr			
1040						1045					1050						
Val	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gly	Thr	Glu	Ala	Leu	Leu	Ala			
1055						1060					1065						
Glu	Ala	Gln	Arg	Leu	Lys	Phe	Ala	Gly	Phe	Arg	Thr	Tyr	Arg	Val			
1070						1075					1080						
Glu	Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe			
1085						1090					1095						
Glu	Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala			
1100						1105					1110						
Asp	Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp			
1115						1120					1125						
Ala	Phe	Asp	Gly	His	Asn	Glu	Glu	Lys	Val	Tyr	Gly	Gly	Val	Ser			
1130						1135					1140						
Glu	Ser	Phe	Gly	Lys	Gln	Cys	Gly	Pro	Gly	Asp	Ile	Val	Gly	Val			
1145						1150					1155						
Phe	Leu	Asp	Leu	Ala	Asp	His	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly			
1160						1165					1170						
Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp			
1175						1180					1185						
Val	Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly			
1190						1195					1200						

346



347

Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile
1805						1810					1815			
Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys
1820						1825					1830			
Asn	Glu	Tyr	Ile	Thr	Pro	Leu	Gly	Ala	Glu	Leu	Lys	Glu	Leu	Tyr
1835						1840					1845			
Ser	Asp	Glu	Glu	Met	Gln	His	Ser	Leu	Arg	Ser	Leu	Val	Thr	Glu
1850						1855					1860			
Ser	Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Pro	Pro	Val
1865						1870					1875			
Ile	Ala	Thr	Ser	Ser	Met	Pro	Ser	Val	Ser	Ser	Glu	Pro	Ile	Pro
1880						1885					1890			
Asp	Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val	Val
1895						1900					1905			
Arg	Gln	Phe	Val	Met	Glu	Ala	Leu	Lys	Asp	Ala	Val	Glu	Ile	Asn
1910						1915					1920			
Gln	Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn	Leu
1925						1930					1935			
Phe	Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val	Gly
1940						1945					1950			
Val	Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile	Asp
1955						1960					1965			
Pro	Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp	Glu
1970						1975					1980			
His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys
1985						1990					1995			
Leu	Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln	Leu
2000						2005					2010			
Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe	Val
2015						2020					2025			
Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	Lys
2030						2035					2040			
Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	Glu
2045						2050					2055			
Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe
2060						2065					2070			
Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu
2075						2080					2085			
Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln
2090						2095					2100			

Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly
2105						2110					2115			
Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr
2120						2125					2130			
Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu
2135						2140					2145			
Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys
2150						2155					2160			
Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile
2165						2170					2175			
Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg
2180						2185					2190			
Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr
2195						2200					2205			
Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp
2210						2215					2220			
Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser
2225						2230					2235			
Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val
2240						2245					2250			
Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu
2255						2260					2265			
Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly
2270						2275					2280			
Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val
2285						2290					2295			
Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met
2300						2305					2310			
Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly
2315						2320					2325			
Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu
2330						2335					2340			
Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser
2345						2350					2355			
Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu
2360						2365					2370			
Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val
2375						2380					2385			
Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu
2390						2395					2400			

Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg
2405						2410					2415			
Tyr	Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser
2420						2425					2430			
Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg
2435						2440					2445			
Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu
2450						2455					2460			
Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser
2465						2470					2475			
Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly
2480						2485					2490			
Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp
2495						2500					2505			
Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu
2510						2515					2520			
Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu
2525						2530					2535			
Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser
2540						2545					2550			
Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe
2555						2560					2565			
Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp
2570						2575					2580			
Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu
2585						2590					2595			
Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr
2600						2605					2610			
Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr
2615						2620					2625			
Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala
2630						2635					2640			
Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys
2645						2650					2655			
His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu
2660						2665					2670			
Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met
2675						2680					2685			
Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala
2690						2695					2700			

Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg
2705						2710					2715			
Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val
2720						2725					2730			
Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr
2735						2740					2745			
Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp
2750						2755					2760			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2765						2770					2775			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2780						2785					2790			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2795						2800					2805			
Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met
2810						2815					2820			
Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr
2825						2830					2835			
Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys
2840						2845					2850			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu
2855						2860					2865			
Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys
2870						2875					2880			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg
2885						2890					2895			
Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu
2900						2905					2910			
Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Ala	Leu
2915						2920					2925			
Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn
2930						2935					2940			
Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro
2945						2950					2955			
Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met
2960						2965					2970			
Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys
2975						2980					2985			
Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln
2990						2995					3000			

Leu Val 3005	Pro Tyr Asp	Leu Leu 3010	Thr Asp Lys Glu Lys 3015	Lys Lys Asp
Arg Glu 3020	Arg Ser Gln Glu Phe 3025	Leu Lys Tyr Met Gln 3030	Tyr Gln Gly	
Tyr Lys 3035	Leu His Lys Pro Ser 3040	Lys Gly Gly Ala Val 3045	Glu Glu Gly	
Gly Ala 3050	Thr Gln Ala Ala Val 3055	Glu Leu Arg Phe Ser 3060	Tyr Ser Leu	
Leu Glu 3065	Lys Leu Ile Gln Tyr 3070	Leu Asp Arg Ala Thr 3075	Ile Asn Met	
Lys Leu 3080	Leu Lys Pro Ser Thr 3085	Thr Phe Ser Arg Arg 3090	Ser Ser Phe	
Lys Thr 3095	Ala Thr Arg Asp Ile 3100	Lys Phe Phe Ser Lys 3105	Val Val Leu	
Pro Leu 3110	Met Glu Lys Tyr Phe 3115	Ser Thr His Arg Asn 3120	Tyr Phe Ile	
Ala Ile 3125	Ala Thr Ala Thr Asn 3130	Asn Ile Gly Ala Ala 3135	Ser Leu Lys	
Glu Lys 3140	Glu Met Val Ala Ser 3145	Ile Phe Cys Lys Leu 3150	Ala Ala Leu	
Leu Arg 3155	Asn Arg Leu Ser Ala 3160	Phe Gly Pro Asp Val 3165	Arg Ile Thr	
Val Arg 3170	Cys Leu Gln Val Leu 3175	Val Lys Gly Ile Asp 3180	Ala Arg Thr	
Leu Thr 3185	Lys Asn Cys Pro Glu 3190	Phe Ile Arg Thr Ser 3195	Met Leu Thr	
Phe Phe 3200	Asn Gln Thr Ser Asp 3205	Asp Leu Gly Asn Thr 3210	Ile Leu Asn	
Leu Gln 3215	Asp Gly Lys Tyr Ser 3220	His Leu Arg Gly Thr 3225	His Leu Lys	
Thr Ser 3230	Thr Ser Leu Gly Tyr 3235	Val Asn Gln Val Val 3240	Leu Pro Val	
Leu Thr 3245	Ala Met Phe Asp His 3250	Leu Ala Ala Cys Asp 3255	Tyr Gly Ser	
Asp Leu 3260	Leu Leu Asp Glu Ile 3265	Gln Val Ala Ser Tyr 3270	Lys Ile Leu	
Ala Ala 3275	Leu Tyr His Leu Gly 3280	Thr Asp Gly Thr Leu 3285	Thr His Asp	
Arg Lys 3290	Tyr Leu Lys Thr Glu 3295	Ile Glu Arg His Arg 3300	Pro Ala Leu	

Gly	Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe
3305						3310					3315			
Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn
3320						3325					3330			
Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys
3335						3340					3345			
Met	Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Ala	Glu	Val
3350						3355					3360			
Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His
3365						3370					3375			
Ile	Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe
3380						3385					3390			
Trp	Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn
3395						3400					3405			
His	Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg
3410						3415					3420			
Asn	Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala
3425						3430					3435			
Pro	Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile
3440						3445					3450			
Asn	Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala
3455						3460					3465			
Glu	Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp
3470						3475					3480			
Ser	Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln
3485						3490					3495			
Val	Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp
3500						3505					3510			
Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln
3515						3520					3525			
Arg	Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu
3530						3535					3540			
Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln
3545						3550					3555			
Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile
3560						3565					3570			
Asp	Asn	Met	Ala	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala
3575						3580					3585			
Ile	Ser	Glu	Gly	Ala	Pro	Ala	Val	Gly	Gly	Lys	Val	Lys	Lys	Lys
3590						3595					3600			

Lys	Lys	Asn	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln
3605						3610					3615			
Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly
3620						3625					3630			
Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys
3635						3640					3645			
Lys	Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu
3650						3655					3660			
Phe	Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ser
3665						3670					3675			
Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys
3680						3685					3690			
Thr	Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val
3695						3700					3705			
Asn	Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp
3710						3715					3720			
Arg	Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile
3725						3730					3735			
Asp	His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val
3740						3745					3750			
Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr
3755						3760					3765			
Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala
3770						3775					3780			
Arg	Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln
3785						3790					3795			
Glu	Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu
3800						3805					3810			
Lys	Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro
3815						3820					3825			
Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu
3830						3835					3840			
Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala
3845						3850					3855			
Gln	Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly
3860						3865					3870			
Asp	Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser
3875						3880					3885			
Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln
3890						3895					3900			



Ala	Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His
3905						3910					3915			
Ile	Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr
3920						3925					3930			
Leu	Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile
3935						3940					3945			
Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly
3950						3955					3960			
Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu
3965						3970					3975			
Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly
3980						3985					3990			
Val	Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala
3995						4000					4005			
Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu
4010						4015					4020			
Gly	His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly
4025						4030					4035			
Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu
4040						4045					4050			
Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser
4055						4060					4065			
Ser	Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys
4070						4075					4080			
Ala	Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	Val
4085						4090					4095			
Ile	Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser
4100						4105					4110			
Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His
4115						4120					4125			
Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu
4130						4135					4140			
Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu
4145						4150					4155			
Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln
4160						4165					4170			
Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile
4175						4180					4185			
Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu
4190						4195					4200			

Ser	Pro	Ser	Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val
4205						4210					4215			
Thr	Pro	Lys	Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr
4220						4225					4230			
Thr	Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn
4235						4240					4245			
His	Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His
4250						4255					4260			
Glu	Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr
4265						4270					4275			
Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe
4280						4285					4290			
Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu
4295						4300					4305			
Gly	Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val
4310						4315					4320			
Tyr	Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro
4325						4330					4335			
Gln	Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr
4340						4345					4350			
Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys
4355						4360					4365			
Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala
4370						4375					4380			
Thr	Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser
4385						4390					4395			
Ser	Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro
4400						4405					4410			
Ile	Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly
4415						4420					4425			
Val	His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val
4430						4435					4440			
Met	Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys
4445						4450					4455			
Ile	Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys
4460						4465					4470			
Val	Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly
4475						4480					4485			
Pro	Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr
4490						4495					4500			

Phe	Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly
4505						4510					4515			
Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly
4520						4525					4530			
Met	Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met
4535						4540					4545			
Glu	Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser
4550						4555					4560			
Gly	Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile
4565						4570					4575			
Val	Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu
4580						4585					4590			
Arg	Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile
4595						4600					4605			
Glu	Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro
4610						4615					4620			
Ala	Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val
4625						4630					4635			
Ser	Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu
4640						4645					4650			
Val	Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val
4655						4660					4665			
Thr	Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu
4670						4675					4680			
Ile	Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser
4685						4690					4695			
Gly	Phe	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met
4700						4705					4710			
Glu	Asp	Glu	Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe
4715						4720					4725			
Tyr	Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu
4730						4735					4740			
Val	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro
4745						4750					4755			
Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu
4760						4765					4770			
Phe	Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe
4775						4780					4785			
Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro
4790						4795					4800			

Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys
4805						4810					4815			
Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly
4820						4825					4830			
Met	Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly
4835						4840					4845			
Ile	Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp
4850						4855					4860			
Lys	Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu
4865						4870					4875			
Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe
4880						4885					4890			
Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu
4895						4900					4905			
Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val
4910						4915					4920			
Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val
4925						4930					4935			
Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp
4940						4945					4950			
Glu	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val
4955						4960					4965			
Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp
4970						4975					4980			
Glu	Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile
4985						4990					4995			
Ile	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu
5000						5005					5010			
Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg
5015						5020					5025			
Asp	Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe
5030						5035					5040			
Ile	Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly
5045						5050					5055			
Phe	Asp	Thr	His	Val	Gln	Lys	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met
5060						5065					5070			
Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr
5075						5080					5085			
Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr	Gln	Gln	Arg	Ser	Trp
5090						5095					5100			

Asp Phe Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp  
 5105 5110 5115

Glu Leu Ser Gly Gly Gly Gly Gly Gly  
 5120 5125

<210> 123  
 <211> 5126  
 <212> PRT  
 <213> Drosophila melanogaster

<220>  
 <223> gi 2160475

<400> 123  
 Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15  
 Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240

Gln	Asn	Ile	Val	Ile	Tyr	Glu	Gly	Gly	Val	Val	Met	Ala	Gln	Ala	Arg		
				245					250						255		
Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe		
			260					265					270				
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg		
		275					280					285					
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu		
	290					295					300						
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Ser	Trp	Gln	Glu	Lys	Asp	Asp		
305					310				315						320		
Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	Pro		
			325						330					335			
Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	Thr		
		340						345					350				
Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val		
	355						360					365					
Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met		
370						375					380						
Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	Thr		
385					390				395						400		
Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	Thr		
				405					410					415			
Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	Gln		
			420					425					430				
Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn		
		435					440					445					
Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn		
	450					455					460						
Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly		
465					470					475					480		
Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	Thr		
				485					490					495			
Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	Gln		
			500					505					510				
Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	Ile		
		515					520					525					
Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn	Arg		
	530					535					540						
Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	Gly		
545					550					555					560		

Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
 565 570 575  
 Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu  
 580 585 590  
 Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser  
 595 600 605  
 Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile  
 610 615 620  
 Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
 625 630 635 640  
 Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg Val  
 645 650 655  
 Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
 660 665 670  
 His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly Trp  
 675 680 685  
 Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys Trp  
 690 695 700  
 Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp Gly  
 705 710 715 720  
 Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala Leu  
 725 730 735  
 Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala Ile  
 740 745 750  
 Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys Val  
 755 760 765  
 Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val  
 770 775 780  
 Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly Asp  
 785 790 795 800  
 His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu Val  
 805 810 815  
 Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe Tyr  
 820 825 830  
 Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile Glu  
 835 840 845  
 Asp Asp Thr 'Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val Thr  
 850 855 860  
 Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile  
 865 870 875 880

His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly  
 885 890 895  
 Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe  
 900 905 910  
 Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala Val  
 915 920 925  
 Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met Asp  
 930 935 940  
 Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe  
 945 950 955 960  
 Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val  
 965 970 975  
 Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn  
 980 985 990  
 Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
 995 1000 1005  
 Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val  
 1010 1015 1020  
 Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp  
 1025 1030 1035  
 Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys  
 1040 1045 1050  
 Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg  
 1055 1060 1065  
 Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu  
 1070 1075 1080  
 Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu  
 1085 1090 1095  
 Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp  
 1100 1105 1110  
 Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala  
 1115 1120 1125  
 Phe Asp Gly His Asn Val Thr Lys Met His Ala Gly Ser Ile Glu  
 1130 1135 1140  
 His Phe Gly Val Arg Tyr Glu Ala Gly Asp Val Ile Gly Cys Phe  
 1145 1150 1155  
 Ile Asp Val Lys Glu Gln Thr Ile Ser Phe Ser Leu Asn Gly Glu  
 1160 1165 1170  
 Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala Asp Val  
 1175 1180 1185



Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val
1190						1195					1200			
Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	Leu
1205						1210					1215			
Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu	Phe
1295						1300					1305			
Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys	Asn
1310						1315					1320			
Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln	Met
1325						1330					1335			
Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys	Gly
1340						1345					1350			
Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe	Asp
1355						1360					1365			
Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro	Asn
1370						1375					1380			
Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe	Glu
1385						1390					1395			
Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr	Ser
1400						1405					1410			
Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys	Lys
1415						1420					1425			
Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser	Arg
1430						1435					1440			
Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr	Ser
1445						1450					1455			
Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val	Asn
1460						1465					1470			
Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn	Ala
1475						1480					1485			

Glu Ile	Pro Pro Ser Pro Val	Pro Gln Gly Pro Lys	Gln Leu Ser
1490	1495	1500	
Gly Ser	Asn Leu Gly Gln Gln	Pro Val Glu Thr Ser	Gly Asp Glu
1505	1510	1515	
Met Phe	Asp Ala Glu Cys Leu	Lys Leu Ile Asn Glu	Tyr Phe Tyr
1520	1525	1530	
Gly Val	Arg Ile Phe Pro Gly	Gln Asp Pro Thr His	Val Tyr Val
1535	1540	1545	
Gly Trp	Val Thr Thr Gln Tyr	His Leu His Ser Arg	Glu Phe Asn
1550	1555	1560	
Lys Asn	Lys Val Arg Arg Gly	Ser Val Tyr Ile Glu	Asp Asp Tyr
1565	1570	1575	
Glu Met	Ala Ile Glu Arg Ile	Asp Arg Gln Ser Cys	Tyr Val Val
1580	1585	1590	
Arg Ala	Asp Glu Leu Phe Asn	Glu Val Thr Gln Asp	Ala Ser Gly
1595	1600	1605	
Lys Gly	Ala Ser Gln Gly Met	Phe Val Gly Cys Phe	Val Asp Thr
1610	1615	1620	
Ala Thr	Gly Ile Ile Arg Phe	Thr Cys Glu Gly Lys	Asp Thr Ser
1625	1630	1635	
His Arg	Trp Met Met Glu Pro	Asp Thr Lys Leu Phe	Pro Ala Ile
1640	1645	1650	
Phe Val	Glu Ala Thr Ser Lys	Glu Ile Leu Gln Ile	Glu Leu Gly
1655	1660	1665	
Arg Thr	Pro Thr Thr Leu Pro	Leu Ser Ala Ala Val	Leu Pro Thr
1670	1675	1680	
Ser Asp	Lys His Ile Asn Pro	Gln Ser Pro Pro Arg	Leu Lys Val
1685	1690	1695	
Gln Cys	Leu Arg Pro His Gln	Trp Ala Arg Val Pro	Asn Thr Ala
1700	1705	1710	
Leu Gln	Val His Ala Leu Lys	Leu Ser Asp Val Arg	Gly Trp Ser
1715	1720	1725	
Met Leu	Cys Glu Asp Pro Val	Ser Met Leu Ala Leu	His Ile Pro
1730	1735	1740	
Glu Glu	Asp Arg Cys Ile Asp	Ile Leu Glu Leu Ile	Glu Met Asp
1745	1750	1755	
Lys Leu	Leu Ser Phe His Ala	His Ser Leu Thr Leu	Tyr Ala Ala
1760	1765	1770	
Leu Cys	Tyr Gln Ser Asn Tyr	Arg Ala Ala His Ala	Leu Cys Gln
1775	1780	1785	

His Val Asp Gln Lys Gln Leu	Leu Tyr Ala Ile Arg Ser Glu Tyr
1790	1795 1800
Met Ser Gly Pro Leu Arg Gln	Gly Phe Tyr Asp Leu Leu Ile Ala
1805	1810 1815
Leu His Leu Glu Ser His Ala	Thr Thr Met Glu Val Cys Lys Asn
1820	1825 1830
Glu Tyr Ile Thr Pro Leu Gly	Ala Glu Leu Lys Glu Leu Tyr Ser
1835	1840 1845
Asp Glu Glu Met Gln His Ser	Leu Arg Ser Leu Val Thr Glu Ser
1850	1855 1860
Val Arg Pro Gln Leu Arg Met	Thr Glu Ile Thr Pro Pro Val Ile
1865	1870 1875
Ala Thr Ser Ser Met Pro Ser	Val Ser Ser Glu Pro Ile Pro Asp
1880	1885 1890
Ile Asp Gln Leu Tyr Ser Pro	Lys Phe Pro Leu Glu Val Val Arg
1895	1900 1905
Gln Phe Val Met Glu Ala Leu	Lys Asp Ala Val Glu Ile Asn Gln
1910	1915 1920
Val His Asn Arg Asp Pro Ile	Gly Trp Thr Asn Glu Asn Leu Phe
1925	1930 1935
Leu Pro Leu Ile Lys Leu Thr	Asp Arg Leu Leu Leu Val Gly Val
1940	1945 1950
Leu Thr Asp Glu Asp Val Gln	Arg Leu Leu Val Met Ile Asp Pro
1955	1960 1965
Glu Thr Trp Asp Gln Ala Phe	Glu Arg Glu Gly Lys Asp Glu His
1970	1975 1980
Arg Lys Gly Leu Leu Thr Met	Lys Met Ala Glu Gly Ala Lys Leu
1985	1990 1995
Gln Met Cys Tyr Leu Leu His	His Leu Tyr Asp Thr Gln Leu Arg
2000	2005 2010
His Arg Val Glu Ser Ile Ile	Ala Phe Ser His Asp Phe Val Gly
2015	2020 2025
Asp Leu Gln Thr Asp Gln Leu	Arg Arg Tyr Ile Glu Ile Lys Gln
2030	2035 2040
Ser Asp Leu Pro Ser Ala Val	Ala Ala Lys Lys Thr Lys Glu Phe
2045	2050 2055
Arg Cys Pro Pro Arg Glu Gln	Met Asn Gln Ile Leu Cys Phe Lys
2060	2065 2070
Asn Leu Glu Pro Asp Asp Gln	Asp Asn Cys Thr Cys Gly Leu Glu
2075	2080 2085

Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln	Lys
2090						2095					2100			
Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly	Thr
2105						2110					2115			
Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr	Asn
2120						2125					2130			
Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu	Val
2135						2140					2145			
Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys	Val
2150						2155					2160			
Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu
2165						2170					2175			
Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg	Gln
2180						2185					2190			
Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr	Tyr
2195						2200					2205			
Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp	Val
2210						2215					2220			
Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln
2225						2230					2235			
Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn
2240						2245					2250			
Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu	Arg
2255						2260					2265			
Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly	Arg
2270						2275					2280			
Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val	Ala
2285						2290					2295			
Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val
2300						2305					2310			
Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg
2315						2320					2325			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Asp
2330						2335					2340			
Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr
2345						2350					2355			
Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu
2360						2365					2370			
Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val	Tyr
2375						2380					2385			

Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu	Lys
2390						2395					2400			
Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg	Tyr
2405						2410					2415			
Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val
2420						2425					2430			
Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro
2435						2440					2445			
Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Phe
2450						2455					2460			
Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser	Asp
2465						2470					2475			
Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly	Leu
2480						2485					2490			
Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp	Tyr
2495						2500					2505			
Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val
2510						2515					2520			
Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu	Gln
2525						2530					2535			
Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ser	Leu	Arg	Ser	Leu
2540						2545					2550			
Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe	Thr
2555						2560					2565			
Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp	Met
2570						2575					2580			
Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu	Phe
2585						2590					2595			
Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr	Arg
2600						2605					2610			
Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr	Ile
2615						2620					2625			
Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala	Met
2630						2635					2640			
Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His
2645						2650					2655			
Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp
2660						2665					2670			
Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu
2675						2680					2685			

Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu
2690						2695					2700			
Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys
2705						2710					2715			
Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala
2720						2725					2730			
Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr	Tyr
2735						2740					2745			
Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp	Glu
2750						2755					2760			
Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp	Ser
2765						2770					2775			
Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala	Leu
2780						2785					2790			
Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	Ser
2795						2800					2805			
Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met	Gly
2810						2815					2820			
Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr	Asn
2825						2830					2835			
Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys	Phe
2840						2845					2850			
Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu	Gly
2855						2860					2865			
Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys	His
2870						2875					2880			
Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg	Glu
2885						2890					2895			
Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu	Ala
2900						2905					2910			
Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro	Leu	Asn
2915						2920					2925			
His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn	Glu
2930						2935					2940			
Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val
2945						2950					2955			
Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala
2960						2965					2970			
Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys
2975						2980					2985			

Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln	Leu
2990						2995					3000			
Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg
3005						3010					3015			
Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly	Tyr
3020						3025					3030			
Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly	Gly
3035						3040					3045			
Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu	Leu
3050						3055					3060			
Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys
3065						3070					3075			
Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys
3080						3085					3090			
Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro
3095						3100					3105			
Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala
3110						3115					3120			
Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys	Glu
3125						3130					3135			
Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu	Leu
3140						3145					3150			
Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val
3155						3160					3165			
Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr	Leu
3170						3175					3180			
Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe
3185						3190					3195			
Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn	Gln
3200						3205					3210			
Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr
3215						3220					3225			
Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val	Leu
3230						3235					3240			
Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser	Asp
3245						3250					3255			
Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu	Ala
3260						3265					3270			
Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg
3275						3280					3285			

Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu	Gly
3290						3295					3300			
Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu
3305						3310					3315			
Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg
3320						3325					3330			
Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys	Met
3335						3340					3345			
Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val	Asp
3350						3355					3360			
Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His	Ile
3365						3370					3375			
Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe	Trp
3380						3385					3390			
Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn	His
3395						3400					3405			
Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg	Asn
3410						3415					3420			
Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala	Pro
3425						3430					3435			
Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn
3440						3445					3450			
Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala	Glu
3455						3460					3465			
Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp	Ser
3470						3475					3480			
Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln	Val
3485						3490					3495			
Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp	Ile
3500						3505					3510			
Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg
3515						3520					3525			
Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu	Tyr
3530						3535					3540			
Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr
3545						3550					3555			
Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp
3560						3565					3570			
Asn	Met	Ala	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala	Ile
3575						3580					3585			



Ser	Glu	Gly	Ala	Pro	Ala	Val	Gly	Gly	Lys	Val	Lys	Lys	Lys	Lys
3590						3595					3600			
Lys	Asn	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln	Ala
3605						3610					3615			
Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu
3620						3625					3630			
Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys
3635						3640					3645			
Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu	Phe
3650						3655					3660			
Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ser	Asp
3665						3670					3675			
Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys	Thr
3680						3685					3690			
Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val	Asn
3695						3700					3705			
Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp	Arg
3710						3715					3720			
Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp
3725						3730					3735			
His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser
3740						3745					3750			
Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser
3755						3760					3765			
Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg
3770						3775					3780			
Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln	Glu
3785						3790					3795			
Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu	Lys
3800						3805					3810			
Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro	Leu
3815						3820					3825			
Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg
3830						3835					3840			
Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala	Gln
3845						3850					3855			
Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly	Asp
3860						3865					3870			
Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser	Ile
3875						3880					3885			

His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala
3890						3895					3900			
Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile
3905						3910					3915			
Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr	Leu
3920						3925					3930			
Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln
3935						3940					3945			
Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe
3950						3955					3960			
Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp
3965						3970					3975			
Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val
3980						3985					3990			
Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu
3995						4000					4005			
Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly
4010						4015					4020			
His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn
4025						4030					4035			
Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu
4040						4045					4050			
Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser
4055						4060					4065			
Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala
4070						4075					4080			
Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Ile	Glu	Val	Ile
4085						4090					4095			
Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg
4100						4105					4110			
Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met
4115						4120					4125			
Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys
4130						4135					4140			
Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser
4145						4150					4155			
Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met
4160						4165					4170			
Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu
4175						4180					4185			

Lys Tyr	Phe Asp Met Phe	Leu	Lys Leu Ala Asp	Leu	Ile Glu Ser
4190		4195		4200	
Pro Ser	Phe His Glu Val	Asp	Met Lys Asn Glu	Gly	Trp Val Thr
4205		4210		4215	
Pro Lys	Asp Phe Arg Glu	Lys	Met Glu Gln Ser	Lys	Asn Tyr Thr
4220		4225		4230	
Pro Glu	Glu Met Asp Phe	Leu	Leu Ala Cys Cys	Glu	Arg Asn His
4235		4240		4245	
Glu Gly	Lys Ile Asp Tyr	Arg	Ala Phe Val Glu	His	Phe His Glu
4250		4255		4260	
Pro Ser	Lys Glu Ile Gly	Phe	Asn Leu Ala Val	Leu	Leu Thr Asn
4265		4270		4275	
Leu Ser	Glu His Met Pro	Asn	Glu Pro Arg Leu	Ala	Arg Phe Leu
4280		4285		4290	
Glu Thr	Ala Gly Ser Val	Leu	Asn Tyr Phe Glu	Pro	Phe Leu Gly
4295		4300		4305	
Arg Ile	Glu Ile Leu Gly	Ser	Ser Lys Arg Ile	Glu	Arg Val Tyr
4310		4315		4320	
Phe Glu	Ile Lys Asp Ser	Asn	Ile Glu Gln Trp	Glu	Lys Pro Gln
4325		4330		4335	
Ile Arg	Glu Ser Lys Arg	Ala	Phe Phe Tyr Ser	Ile	Val Thr Glu
4340		4345		4350	
Gly Gly	Asp Lys Glu Lys	Leu	Glu Ala Phe Val	Asn	Phe Cys Glu
4355		4360		4365	
Asp Ala	Ile Phe Glu Met	Thr	His Ala Ser Gly	Leu	Met Ala Thr
4370		4375		4380	
Asp Asp	Gly Gly Gly Asn	Val	Lys Arg Asp Thr	Ala	Tyr Ser Ser
4385		4390		4395	
Tyr Met	Ser Glu Glu Glu	Glu	Glu Arg Ala Ala	Arg	Asp Pro Ile
4400		4405		4410	
Arg Arg	Thr Ile Thr Ala	Val	Lys Glu Gly Leu	Lys	Phe Gly Val
4415		4420		4425	
His Met	Leu Ser Pro Ala	Asn	Ile Lys His Gln	Ile	Gly Val Met
4430		4435		4440	
Gln Thr	Lys Ser Ile Pro	Glu	Leu Ile Val Gly	Phe	Phe Lys Ile
4445		4450		4455	
Ile Phe	Tyr Ile Phe Tyr	Tyr	Thr Gly Tyr Ala	His	Phe Cys Val
4460		4465		4470	
Val Arg	Tyr Ile Phe Gly	Ile	Leu Leu Asn Leu	Met	Arg Gly Pro
4475		4480		4485	

Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr	Phe
4490						4495					4500			
Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly	Thr
4505						4510					4515			
Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly	Met
4520						4525					4530			
Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met	Glu
4535						4540					4545			
Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser	Gly
4550						4555					4560			
Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile	Val
4565						4570					4575			
Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu	Arg
4580						4585					4590			
Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile	Glu
4595						4600					4605			
Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro	Ala
4610						4615					4620			
Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val	Ser
4625						4630					4635			
Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val
4640						4645					4650			
Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val	Thr
4655						4660					4665			
Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu	Ile
4670						4675					4680			
Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser	Gly
4685						4690					4695			
Phe	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met	Glu
4700						4705					4710			
Asp	Glu	Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe	Tyr
4715						4720					4725			
Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu	Val
4730						4735					4740			
Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu
4745						4750					4755			
Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu	Phe
4760						4765					4770			
Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe	Lys
4775						4780					4785			

Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val
4790						4795					4800			
Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys	Tyr
4805						4810					4815			
Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly	Met
4820						4825					4830			
Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly	Ile
4835						4840					4845			
Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys
4850						4855					4860			
Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu	Trp
4865						4870					4875			
Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe
4880						4885					4890			
Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg
4895						4900					4905			
Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu
4910						4915					4920			
Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile
4925						4930					4935			
Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp	Glu
4940						4945					4950			
Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe
4955						4960					4965			
His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu
4970						4975					4980			
Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile	Ile
4985						4990					4995			
Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu	Ala
5000						5005					5010			
Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp
5015						5020					5025			
Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe	Ile
5030						5035					5040			
Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly	Phe
5045						5050					5055			
Asp	Thr	His	Val	Gln	Lys	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe
5060						5065					5070			
Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly
5075						5080					5085			

Gln Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp Asp  
 5090 5095 5100

Phe Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Glu  
 5105 5110 5115

Leu Ser Gly Gly Gly Gly Gly Gly  
 5120 5125

<210> 124  
 <211> 5126  
 <212> PRT  
 <213> *Drosophila melanogaster*

<220>  
 <223> gi 2160476

<400> 124  
 Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15

Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30

Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45

Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60

Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80

Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95

Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110

Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125

Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140

Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160

Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175

Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190

Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205

Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly

210					215					220					
Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	Trp	Gly	Arg	Glu	Ala	Gly
225						230					235				240
Gln	Asn	Ile	Val	Ile	Tyr	Glu	Gly	Gly	Val	Val	Met	Ala	Gln	Ala	Arg
				245					250					255	
Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe
			260					265					270		
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg
		275					280					285			
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu
	290					295					300				
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Ser	Trp	Gln	Glu	Lys	Asp	Asp
305					310					315					320
Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	Pro
				325					330					335	
Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	Thr
			340					345					350		
Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val
		355					360					365			
Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met
	370					375					380				
Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	Thr
385					390					395					400
Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	Thr
				405					410					415	
Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	Gln
			420					425					430		
Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn
		435				440					445				
Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn
	450					455					460				
Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly
465					470					475					480
Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	Thr
				485					490					495	
Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	Gln
			500					505					510		
Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	Ile
		515					520					525			
Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn	Arg

530				535				540							
Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	Gly
545					550					555					560
Ser	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro	Glu
				565					570					575	
Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser	Leu
			580						585					590	
Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys	Ser
		595					600						605		
Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn	Ile
	610					615					620				
Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu	Leu
625					630					635					640
Val	Asp	His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg	Val
				645					650					655	
Asp	Gly	Ser	Ser	Met	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met	Asp
			660					665					670		
His	Ile	Glu	Gln	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	Gly	Trp
		675					680						685		
Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys	Trp
		690				695					700				
Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp	Gly
705					710					715					720
Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala	Leu
				725					730					735	
Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala	Ile
			740					745					750		
Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys	Val
			755				760					765			
Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val
	770					775					780				
Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly	Asp
785					790					795					800
His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu	Val
				805					810					815	
Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe	Tyr
			820					825					830		
Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile	Glu
		835					840					845			
Asp	Asp	Thr	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Thr	Gly	Val	Thr



850	855	860
Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile 865 870 875 880		
His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly 885 890 895		
Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe 900 905 910		
Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala Val 915 920 925		
Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met Asp 930 935 940		
Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe 945 950 955 960		
Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val 965 970 975		
Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn 980 985 990		
Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr 995 1000 1005		
Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val 1010 1015 1020		
Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp 1025 1030 1035		
Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys 1040 1045 1050		
Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg 1055 1060 1065		
Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu 1070 1075 1080		
Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu 1085 1090 1095		
Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp 1100 1105 1110		
Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala 1115 1120 1125		
Phe Asp Gly His Asn Glu Glu Lys Val Tyr Gly Gly Val Ser Glu 1130 1135 1140		
Ser Phe Gly Lys Gln Cys Gly Pro Gly Asp Ile Val Gly Val Phe 1145 1150 1155		
Leu Asp Leu Ala Asp His Thr Ile Ser Phe Ser Leu Asn Gly Glu		

1160		1165		1170
Leu Leu Met Asp Ala Leu	Gly Gly Glu Thr Thr	Phe Ala Asp Val		
1175	1180	1185		
Thr Ala Glu Gly Val Gly	Phe Val Pro Ala Cys	Thr Leu Gly Val		
1190	1195	1200		
Gly Gln Lys Ala Arg Leu	Ile Tyr Gly Gln Asp	Val Asp Ser Leu		
1205	1210	1215		
Lys Phe Phe Thr Thr Cys	Gly Leu Gln Glu Gly	Tyr Glu Pro Phe		
1220	1225	1230		
Cys Val Asn Met Arg Arg	Pro Val Thr His Trp	Tyr Thr Lys Asp		
1235	1240	1245		
Gln Pro Ile Phe Glu Asn	Thr Glu Glu Met Pro	Asp Cys Arg Ile		
1250	1255	1260		
Asp Val Thr Arg Ile Pro	Gly Gly Ala Asp Thr	Pro Pro His Leu		
1265	1270	1275		
Lys Ile Ser His Asn Thr	Phe Glu Thr Met Glu	Lys Ala Asn Trp		
1280	1285	1290		
Glu Phe Leu Arg Leu Ser	Leu Pro Val Thr Cys	Met Gly Glu Phe		
1295	1300	1305		
Ile Ser Glu Gln Glu Lys	Ala Arg Arg Trp Asp	Glu Ile Lys Asn		
1310	1315	1320		
Arg Gln Tyr Arg Leu Met	Arg Glu Ala Glu Ile	Ala Ala Gln Met		
1325	1330	1335		
Gln Val Gln Thr Gln Ala	Ala His Met Asp His	Met Leu Lys Gly		
1340	1345	1350		
Gly Phe Asn Met Asn Asp	Ile Lys Gly Leu Thr	Arg Asn Phe Asp		
1355	1360	1365		
Glu His Ala Asp Ala Glu	Ala Asp His Met Met	Arg Gly Pro Asn		
1370	1375	1380		
Arg Pro Pro Arg Lys Gly	Ser Leu Thr Arg Asn	Ile Thr Phe Glu		
1385	1390	1395		
Thr Asp Met Ser Ala Ala	Leu Asp Glu Met Gln	Arg Ser Thr Ser		
1400	1405	1410		
Val Leu Asp Met Asn Gly	Leu Gly Glu Glu Met	Asp Asp Lys Lys		
1415	1420	1425		
Lys Arg Gly Arg Ser Pro	Phe Lys Phe Phe Ser	Lys Lys Ser Arg		
1430	1435	1440		
Asp Gln Ser Arg Glu Lys	Met Gly Ala Arg Thr	Leu Asp Thr Ser		
1445	1450	1455		
Leu Glu Arg Arg Asn Thr	Val Ala His Gly Arg	Asn Val Val Asn		

1460		1465		1470
Gln Gln Met Thr Thr Arg	Ala Pro Thr Leu Arg	Leu Asn Asn Ala		
1475	1480	1485		
Glu Ile Pro Pro Ser Pro	Val Pro Gln Gly Pro	Lys Gln Leu Ser		
1490	1495	1500		
Gly Ser Asn Leu Gly Gln	Gln Pro Val Glu Thr	Ser Gly Asp Glu		
1505	1510	1515		
Met Phe Asp Ala Glu Cys	Leu Lys Leu Ile Asn	Glu Tyr Phe Tyr		
1520	1525	1530		
Gly Val Arg Ile Phe Pro	Gly Gln Asp Pro Thr	His Val Tyr Val		
1535	1540	1545		
Gly Trp Val Thr Thr Gln	Tyr His Leu His Ser	Arg Glu Phe Asn		
1550	1555	1560		
Lys Asn Lys Val Arg Arg	Gly Ser Val Tyr Ile	Glu Asp Asp Tyr		
1565	1570	1575		
Glu Met Ala Ile Glu Arg	Ile Asp Arg Gln Ser	Cys Tyr Val Val		
1580	1585	1590		
Arg Ala Asp Glu Leu Phe	Asn Glu Val Thr Gln	Asp Ala Ser Gly		
1595	1600	1605		
Lys Gly Ala Ser Gln Gly	Met Phe Val Gly Cys	Phe Val Asp Thr		
1610	1615	1620		
Ala Thr Gly Ile Ile Arg	Phe Thr Cys Glu Gly	Lys Asp Thr Ser		
1625	1630	1635		
His Arg Trp Met Met Glu	Pro Asp Thr Lys Leu	Phe Pro Ala Ile		
1640	1645	1650		
Phe Val Glu Ala Thr Ser	Lys Glu Ile Leu Gln	Ile Glu Leu Gly		
1655	1660	1665		
Arg Thr Pro Thr Thr Leu	Pro Leu Ser Ala Ala	Val Leu Pro Thr		
1670	1675	1680		
Ser Asp Lys His Ile Asn	Pro Gln Ser Pro Pro	Arg Leu Lys Val		
1685	1690	1695		
Gln Cys Leu Arg Pro His	Gln Trp Ala Arg Val	Pro Asn Thr Ala		
1700	1705	1710		
Leu Gln Val His Ala Leu	Lys Leu Ser Asp Val	Arg Gly Trp Ser		
1715	1720	1725		
Met Leu Cys Glu Asp Pro	Val Ser Met Leu Ala	Leu His Ile Pro		
1730	1735	1740		
Glu Glu Asp Arg Cys Ile	Asp Ile Leu Glu Leu	Ile Glu Met Asp		
1745	1750	1755		
Lys Leu Leu Ser Phe His	Ala His Ser Leu Thr	Leu Tyr Ala Ala		

1760	1765	1770
Leu Cys Tyr Gln Ser Asn 1775	Tyr Arg Ala Ala His 1780	Ala Leu Cys Gln 1785
His Val Asp Gln Lys Gln 1790	Leu Leu Tyr Ala Ile 1795	Arg Ser Glu Tyr 1800
Met Ser Gly Pro Leu Arg 1805	Gln Gly Phe Tyr Asp 1810	Leu Leu Ile Ala 1815
Leu His Leu Glu Ser His 1820	Ala Thr Thr Met Glu 1825	Val Cys Lys Asn 1830
Glu Tyr Ile Thr Pro Leu 1835	Gly Ala Glu Leu Lys 1840	Glu Leu Tyr Ser 1845
Asp Glu Glu Met Gln His 1850	Ser Leu Arg Ser Leu 1855	Val Thr Glu Ser 1860
Val Arg Pro Gln Leu Arg 1865	Met Thr Glu Ile Thr 1870	Pro Pro Val Ile 1875
Ala Thr Ser Ser Met Pro 1880	Ser Val Ser Ser Glu 1885	Pro Ile Pro Asp 1890
Ile Asp Gln Leu Tyr Ser 1895	Pro Lys Phe Pro Leu 1900	Glu Val Val Arg 1905
Gln Phe Val Met Glu Ala 1910	Leu Lys Asp Ala Val 1915	Glu Ile Asn Gln 1920
Val His Asn Arg Asp Pro 1925	Ile Gly Trp Thr Asn 1930	Glu Asn Leu Phe 1935
Leu Pro Leu Ile Lys Leu 1940	Thr Asp Arg Leu Leu 1945	Leu Val Gly Val 1950
Leu Thr Asp Glu Asp Val 1955	Gln Arg Leu Leu Val 1960	Met Ile Asp Pro 1965
Glu Thr Trp Asp Gln Ala 1970	Phe Glu Arg Glu Gly 1975	Lys Asp Glu His 1980
Arg Lys Gly Leu Leu Thr 1985	Met Lys Met Ala Glu 1990	Gly Ala Lys Leu 1995
Gln Met Cys Tyr Leu Leu 2000	His His Leu Tyr Asp 2005	Thr Gln Leu Arg 2010
His Arg Val Glu Ser Ile 2015	Ile Ala Phe Ser His 2020	Asp Phe Val Gly 2025
Asp Leu Gln Thr Asp Gln 2030	Leu Arg Arg Tyr Ile 2035	Glu Ile Lys Gln 2040
Ser Asp Leu Pro Ser Ala 2045	Val Ala Ala Lys Lys 2050	Thr Lys Glu Phe 2055
Arg Cys Pro Pro Arg Glu 2060	Gln Met Asn Gln Ile 2065	Leu Cys Phe Lys 2070

2060					2065					2070				
Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu	Glu
2075						2080					2085			
Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln	Lys
2090						2095					2100			
Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly	Thr
2105						2110					2115			
Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr	Asn
2120						2125					2130			
Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu	Val
2135						2140					2145			
Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys	Val
2150						2155					2160			
Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu
2165						2170					2175			
Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg	Gln
2180						2185					2190			
Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr	Tyr
2195						2200					2205			
Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp	Val
2210						2215					2220			
Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln
2225						2230					2235			
Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn
2240						2245					2250			
Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu	Arg
2255						2260					2265			
Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly	Arg
2270						2275					2280			
Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val	Ala
2285						2290					2295			
Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val
2300						2305					2310			
Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg
2315						2320					2325			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Asp
2330						2335					2340			
Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr
2345						2350					2355			
Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu

2360	2365	2370
Ala Leu 2375	Ala Leu Arg Glu His 2380	Tyr Leu Glu Lys Ile 2385
Leu Ser 2390	Arg Cys Gly Leu Gln 2395	Ser Asn Ser Glu Leu 2400
Gly Tyr 2405	Pro Asp Leu Gly Trp 2410	Asp Pro Val Glu Gly 2415
Leu Asp 2420	Phe Leu Arg Tyr Cys 2425	Val Trp Val Asn Gly 2430
Glu Glu 2435	Asn Ala Asn Leu Val 2440	Ile Arg Leu Leu Ile 2445
Glu Cys 2450	Leu Gly Pro Ala Leu 2455	Arg Gly Glu Gly Glu 2460
Arg Ala 2465	Ile Val Glu Ala Asn 2470	Arg Met Ser Glu Arg 2475
Arg Cys 2480	Lys Met Gln Asp Glu 2485	Ala Glu Gly Thr Ile 2490
Asn Phe 2495	Thr His Pro Leu Pro 2500	Glu Gly Glu Glu Asp 2505
Ile Asp 2510	Thr Gly Ala Ala Ile 2515	Leu Asn Phe Tyr Cys 2520
Asp Leu 2525	Leu Gly Arg Cys Ala 2530	Pro Asp Ala Ser Val 2535
Gly Lys 2540	Asn Glu Ser Leu Arg 2545	Ala Arg Ala Ser Leu 2550
Val Pro 2555	Leu Glu Asp Leu Gln 2560	Gly Val Leu Ser Leu 2565
Leu Ser 2570	Gln Thr Ala Pro Gly 2575	Glu Glu Lys Pro Lys 2580
Pro Ser 2585	Gly Leu Leu Pro Asn 2590	Asn Lys Gln Ser Ile 2595
Leu Glu 2600	Arg Val Tyr Gly Ile 2605	Glu Ala Gln Asp Leu 2610
Leu Leu 2615	Glu Asp Ala Phe Leu 2620	Pro Asp Leu Arg Thr 2625
Leu Asp 2630	Lys Ser Asp Gly Ser 2635	Glu Ser Asp Met Ala 2640
Asn Arg 2645	Tyr Ile Gly Asn Ser 2650	Ile Leu Pro Leu Leu 2655
Ser Lys	Phe Tyr Asn Glu Ala	Glu Asn Tyr Ala Ser Leu Leu Asp

2660		2665		2670
Ala Thr Leu His Thr Val Tyr Arg Leu Ser Lys Asn Arg Met Leu				
2675		2680		2685
Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala Leu				
2690		2695		2700
Thr Ser Gln Met Gln Pro Ala Met Leu Leu Lys Leu Leu Arg Lys				
2705		2710		2715
Leu Thr Val Asp Val Ser Lys Leu Ser Glu Tyr Thr Thr Val Ala				
2720		2725		2730
Leu Arg Leu Leu Thr Leu His Phe Asp Arg Cys Ala Lys Tyr Tyr				
2735		2740		2745
Gly Ser Thr Gln Gly Gln Gly Ser Tyr Gly Ala Ser Ser Asp Glu				
2750		2755		2760
Glu Lys Arg Leu Thr Met Leu Leu Phe Ser Asn Ile Phe Asp Ser				
2765		2770		2775
Leu Ser Asn Met Asp Tyr Asp Pro Glu Leu Phe Gly Lys Ala Leu				
2780		2785		2790
Pro Cys Leu Ile Ala Ile Gly Cys Ala Leu Pro Pro Asp Tyr Ser				
2795		2800		2805
Leu Ser Lys Asn Thr Asp Glu Asp Tyr Tyr Gly Arg Gln Met Gly				
2810		2815		2820
Ala Pro Asp Gln Pro Gln Tyr Met Pro Asn Pro Ile Asp Thr Asn				
2825		2830		2835
Asn Val His Leu Asp Asn Asp Leu Asn Ser Leu Val Gln Lys Phe				
2840		2845		2850
Ser Glu His Tyr His Asp Ala Trp Ala Ser Arg Arg Leu Glu Gly				
2855		2860		2865
Gly Trp Thr Tyr Gly Asp Ile Arg Ser Asp Asn Asp Arg Lys His				
2870		2875		2880
Pro Arg Leu Lys Pro Tyr Asn Met Leu Ser Glu Tyr Glu Arg Glu				
2885		2890		2895
Arg Tyr Arg Asp Pro Val Arg Glu Cys Leu Lys Gly Leu Leu Ala				
2900		2905		2910
Ile Gly Trp Thr Val Glu His Ser Glu Val Glu Val Pro Leu Asn				
2915		2920		2925
His Arg Gly Ser Thr Arg Arg Gln Ser Lys Pro Gln Ile Asn Glu				
2930		2935		2940
Phe Gln Asn Glu Gly Ser Pro Phe Asn Tyr Asn Pro His Pro Val				
2945		2950		2955
Asp Met Ser Asn Leu Thr Leu Ser Arg Glu Met Gln Asn Met Ala				

2960					2965					2970				
Glu Arg	Leu Ala	Glu Asn	Ser	His Asp	Ile Trp	Ala	Lys Lys Lys							
2975			2980			2985								
Asn Glu	Glu Leu	Asn Gly	Cys	Gly Gly	Val Ile	His	Pro Gln Leu							
2990			2995			3000								
Val Pro	Tyr Asp	Leu Leu	Thr	Asp Lys	Glu Lys	Lys	Lys Asp Arg							
3005			3010			3015								
Glu Arg	Ser Gln	Glu Phe	Leu	Lys Tyr	Met Gln	Tyr	Gln Gly Tyr							
3020			3025			3030								
Lys Leu	His Lys	Pro Ser	Lys	Gly Gly	Ala Val	Glu	Glu Gly Gly							
3035			3040			3045								
Ala Thr	Gln Ala	Ala Val	Glu	Leu Arg	Phe Ser	Tyr	Ser Leu Leu							
3050			3055			3060								
Glu Lys	Leu Ile	Gln Tyr	Leu	Asp Arg	Ala Thr	Ile	Asn Met Lys							
3065			3070			3075								
Leu Leu	Lys Pro	Ser Thr	Thr	Phe Ser	Arg Arg	Ser	Ser Phe Lys							
3080			3085			3090								
Thr Ala	Thr Arg	Asp Ile	Lys	Phe Phe	Ser Lys	Val	Val Leu Pro							
3095			3100			3105								
Leu Met	Glu Lys	Tyr Phe	Ser	Thr His	Arg Asn	Tyr	Phe Ile Ala							
3110			3115			3120								
Ile Ala	Thr Ala	Thr Asn	Asn	Ile Gly	Ala Ala	Ser	Leu Lys Glu							
3125			3130			3135								
Lys Glu	Met Val	Ala Ser	Ile	Phe Cys	Lys Leu	Ala	Ala Leu Leu							
3140			3145			3150								
Arg Asn	Arg Leu	Ser Ala	Phe	Gly Pro	Asp Val	Arg	Ile Thr Val							
3155			3160			3165								
Arg Cys	Leu Gln	Val Leu	Val	Lys Gly	Ile Asp	Ala	Arg Thr Leu							
3170			3175			3180								
Thr Lys	Asn Cys	Pro Glu	Phe	Ile Arg	Thr Ser	Met	Leu Thr Phe							
3185			3190			3195								
Phe Asn	Gln Thr	Ser Asp	Asp	Leu Gly	Asn Thr	Ile	Leu Asn Gln							
3200			3205			3210								
Gln Asp	Gly Lys	Tyr Ser	His	Leu Arg	Gly Thr	His	Leu Lys Thr							
3215			3220			3225								
Ser Thr	Ser Leu	Gly Tyr	Val	Asn Gln	Val Val	Leu	Pro Val Leu							
3230			3235			3240								
Thr Ala	Met Phe	Asp His	Leu	Ala Ala	Cys Asp	Tyr	Gly Ser Asp							
3245			3250			3255								
Leu Leu	Leu Asp	Glu Ile	Gln	Val Ala	Ser Tyr	Lys	Ile Leu Ala							



3260					3265					3270				
Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg
3275						3280					3285			
Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu	Gly
3290						3295					3300			
Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu
3305						3310					3315			
Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg
3320						3325					3330			
Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys	Met
3335						3340					3345			
Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val	Asp
3350						3355					3360			
Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His	Ile
3365						3370					3375			
Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe	Trp
3380						3385					3390			
Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn	His
3395						3400					3405			
Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg	Asn
3410						3415					3420			
Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala	Pro
3425						3430					3435			
Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn
3440						3445					3450			
Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala	Glu
3455						3460					3465			
Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp	Ser
3470						3475					3480			
Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln	Val
3485						3490					3495			
Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp	Ile
3500						3505					3510			
Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg
3515						3520					3525			
Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu	Tyr
3530						3535					3540			
Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr
3545						3550					3555			
Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp

3560		3565		3570
Asn Met	Ala Leu Ile Met	Pro Thr Ala Thr Arg	Arg Ser Ala Ile	
3575		3580	3585	
Ser Glu	Gly Ala Pro Ala	Val Gly Gly Lys Val	Lys Lys Lys Lys	
3590		3595	3600	
Lys Asn	Arg Asp Lys Lys	Arg Asp Lys Asp Lys	Glu Val Gln Ala	
3605		3610	3615	
Ser Leu	Met Val Ala Cys	Leu Lys Arg Leu Leu	Pro Val Gly Leu	
3620		3625	3630	
Asn Leu	Phe Ala Gly Arg	Glu Gln Glu Leu Val	Gln His Cys Lys	
3635		3640	3645	
Asp Arg	Tyr Leu Lys Lys	Met Pro Glu Tyr Asp	Val Ile Glu Phe	
3650		3655	3660	
Ala Arg	Asn Gln Leu Thr	Leu Pro Asp Lys Leu	Asp Pro Ser Asp	
3665		3670	3675	
Glu Met	Ser Trp Gln His	Tyr Leu Tyr Ser Lys	Leu Gly Lys Thr	
3680		3685	3690	
Glu Glu	Pro Val Asp Glu	Gln Ala Leu Glu Lys	Ala Asn Val Asn	
3695		3700	3705	
Ser Asn	Glu Lys Gly Lys	Asp Lys Thr Gln Glu	Thr Val Asp Arg	
3710		3715	3720	
Ile Val	Ala Met Ala Lys	Val Leu Phe Gly Leu	His Met Ile Asp	
3725		3730	3735	
His Pro	Gln Gln Gln Ser	Lys Asn Val Tyr Arg	Ser Val Val Ser	
3740		3745	3750	
Ile Gln	Arg Lys Arg Ala	Val Ile Ala Cys Phe	Arg Gln Thr Ser	
3755		3760	3765	
Leu His	Ser Leu Pro Arg	His Arg Ala Cys Asn	Ile Phe Ala Arg	
3770		3775	3780	
Ser Tyr	Tyr Glu Gln Trp	Leu Gln Glu Glu Asn	Val Gly Gln Glu	
3785		3790	3795	
Val Met	Val Glu Asp Leu	Thr Gln Thr Phe Glu	Asp Ser Glu Lys	
3800		3805	3810	
Ser Lys	Lys Glu Gly Glu	Glu Thr Asp Ser Lys	Pro Asp Pro Leu	
3815		3820	3825	
Thr Gln	Leu Val Thr Thr	Phe Cys Arg Gly Ala	Met Thr Glu Arg	
3830		3835	3840	
Ser Gly	Ala Leu Gln Glu	Asp Leu Leu Tyr Met	Ser Tyr Ala Gln	
3845		3850	3855	
Ile Ala	Ala Lys Ser Thr	Gly Lys Glu Glu Glu	Glu Gly Gly Asp	

3860						3865						3870					
Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser	Ile			
3875						3880						3885					
His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala			
3890						3895						3900					
Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile			
3905						3910						3915					
Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr	Leu			
3920						3925						3930					
Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln			
3935						3940						3945					
Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe			
3950						3955						3960					
Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp			
3965						3970						3975					
Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val			
3980						3985						3990					
Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu			
3995						4000						4005					
Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly			
4010						4015						4020					
His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn			
4025						4030						4035					
Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu			
4040						4045						4050					
Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser			
4055						4060						4065					
Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala			
4070						4075						4080					
Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Ile	Glu	Val	Ile			
4085						4090						4095					
Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg			
4100						4105						4110					
Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met			
4115						4120						4125					
Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys			
4130						4135						4140					
Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser			
4145						4150						4155					
Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met			

4160	4165	4170
Val Asp Thr Leu Val Glu Ser	Ala Ser Asn Val Glu	Leu Ile Leu
4175	4180	4185
Lys Tyr Phe Asp Met Phe Leu	Lys Leu Ala Asp Leu	Ile Glu Ser
4190	4195	4200
Pro Ser Phe His Glu Val Asp	Met Lys Asn Glu Gly	Trp Val Thr
4205	4210	4215
Pro Lys Asp Phe Arg Glu Lys	Met Glu Gln Ser Lys	Asn Tyr Thr
4220	4225	4230
Pro Glu Glu Met Asp Phe Leu	Leu Ala Cys Cys Glu	Arg Asn His
4235	4240	4245
Glu Gly Lys Ile Asp Tyr Arg	Ala Phe Val Glu His	Phe His Glu
4250	4255	4260
Pro Ser Lys Glu Ile Gly Phe	Asn Leu Ala Val Leu	Leu Thr Asn
4265	4270	4275
Leu Ser Glu His Met Pro Asn	Glu Pro Arg Leu Ala	Arg Phe Leu
4280	4285	4290
Glu Thr Ala Gly Ser Val Leu	Asn Tyr Phe Glu Pro	Phe Leu Gly
4295	4300	4305
Arg Ile Glu Ile Leu Gly Ser	Ser Lys Arg Ile Glu	Arg Val Tyr
4310	4315	4320
Phe Glu Ile Lys Asp Ser Asn	Ile Glu Gln Trp Glu	Lys Pro Gln
4325	4330	4335
Ile Arg Glu Ser Lys Arg Ala	Phe Phe Tyr Ser Ile	Val Thr Glu
4340	4345	4350
Gly Gly Asp Lys Glu Lys Leu	Glu Ala Phe Val Asn	Phe Cys Glu
4355	4360	4365
Asp Ala Ile Phe Glu Met Thr	His Ala Ser Gly Leu	Met Ala Thr
4370	4375	4380
Asp Asp Gly Gly Gly Asn Val	Lys Arg Asp Thr Ala	Tyr Ser Ser
4385	4390	4395
Tyr Met Ser Glu Glu Glu Glu	Glu Arg Ala Ala Arg	Asp Pro Ile
4400	4405	4410
Arg Arg Thr Ile Thr Ala Val	Lys Glu Gly Leu Lys	Phe Gly Val
4415	4420	4425
His Met Leu Ser Pro Ala Asn	Ile Lys His Gln Ile	Gly Val Met
4430	4435	4440
Gln Thr Lys Ser Ile Pro Glu	Leu Ile Val Gly Phe	Phe Lys Ile
4445	4450	4455
Ile Phe Tyr Ile Phe Tyr Tyr	Thr Gly Tyr Ala His	Phe Cys Val

4460		4465		4470
Val Arg Tyr Ile Phe Gly Ile Leu Leu Asn Leu Met Arg Gly Pro				
4475		4480		4485
Ala Pro Glu Gln Glu Glu Glu Pro Val Val Glu Glu Glu Thr Phe				
4490		4495		4500
Gly Arg Ala Leu Pro Pro Leu Pro Leu Glu Glu Pro Pro Gly Thr				
4505		4510		4515
Val Gln Ala Phe Gly Leu Asp Ile Asn Lys Glu Glu Asn Gly Met				
4520		4525		4530
Tyr Lys Val Val Val His Glu Ser Pro Ala Asn Ser Ser Met Glu				
4535		4540		4545
Glu Gly Gly Glu Ser Ser Pro Glu Asp Gly Ala Ala Ala Ser Gly				
4550		4555		4560
Glu Leu Val Glu Gly Glu Pro His Gln Glu Pro Ile Ser Ile Val				
4565		4570		4575
Asp Leu Leu Gly Gly Glu Ala Ala Lys Lys Ala Ala Gln Glu Arg				
4580		4585		4590
Gln Glu Ala Gln Lys Ala Gln Glu Ala Ala Met Ala Ser Ile Glu				
4595		4600		4605
Ala Glu Ala Lys Lys Ser Ser Ser Ala Pro Gln Glu Thr Pro Ala				
4610		4615		4620
Val His Gln Ile Asp Phe Ser Gln Tyr Thr His Arg Ala Val Ser				
4625		4630		4635
Phe Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val				
4640		4645		4650
Leu Ala Phe Ser Ile Asn Phe Met Leu Leu Phe Tyr Lys Val Thr				
4655		4660		4665
Ser Phe Thr Glu Glu Ala Asp Ser Ser Ala Glu Glu Glu Leu Ile				
4670		4675		4680
Leu Gly Ser Gly Ser Gly Gly Gly Ala Asp Ile Thr Gly Ser Gly				
4685		4690		4695
Phe Gly Gly Ser Gly Asp Gly Gly Ser Gly Asp Gly Glu Met Glu				
4700		4705		4710
Asp Glu Ile Pro Glu Leu Val His Val Asp Glu Asp Phe Phe Tyr				
4715		4720		4725
Met Glu His Val Leu Arg Ile Ala Ala Cys Leu His Ser Leu Val				
4730		4735		4740
Ser Leu Ala Met Leu Ile Ala Tyr Tyr His Leu Lys Val Pro Leu				
4745		4750		4755
Ala Ile Phe Lys Arg Glu Lys Glu Ile Ala Arg Arg Leu Glu Phe				

4760	4765	4770
Glu Gly Leu Phe Ile Ala	Glu Gln Pro Glu Asp	Asp Asp Phe Lys
4775	4780	4785
Ser His Trp Asp Lys Leu	Val Ile Ser Ala Lys	Ser Phe Pro Val
4790	4795	4800
Asn Tyr Trp Asp Lys Phe	Val Lys Lys Lys Val	Arg Gln Lys Tyr
4805	4810	4815
Ser Glu Thr Tyr Asp Phe	Asp Ser Ile Ser Asn	Leu Leu Gly Met
4820	4825	4830
Glu Lys Ser Thr Phe Ala	Ala Gln Glu Ser Glu	Glu Thr Gly Ile
4835	4840	4845
Phe Lys Tyr Ile Met Asn	Ile Asp Trp Arg Tyr	Gln Val Trp Lys
4850	4855	4860
Ala Gly Val Thr Phe Thr	Asp Asn Ala Phe Leu	Tyr Ser Leu Trp
4865	4870	4875
Tyr Phe Ser Phe Ser Val	Met Gly Asn Phe Asn	Asn Phe Phe Phe
4880	4885	4890
Ala Ala His Leu Leu Asp	Val Ala Val Gly Phe	Lys Thr Leu Arg
4895	4900	4905
Thr Ile Leu Gln Ser Val	Thr His Asn Gly Lys	Gln Leu Val Leu
4910	4915	4920
Thr Val Met Leu Leu Thr	Ile Ile Val Tyr Ile	Tyr Thr Val Ile
4925	4930	4935
Ala Phe Asn Phe Phe Arg	Lys Phe Tyr Ile Gln	Glu Glu Asp Glu
4940	4945	4950
Glu Val Asp Lys Lys Cys	His Asp Met Leu Thr	Cys Phe Val Phe
4955	4960	4965
His Leu Tyr Lys Gly Val	Arg Ala Gly Gly Gly	Ile Gly Asp Glu
4970	4975	4980
Ile Gly Asp Pro Asp Gly	Asp Asp Tyr Glu Val	Tyr Arg Ile Ile
4985	4990	4995
Phe Asp Ile Thr Phe Phe	Phe Phe Val Ile Ile	Ile Leu Leu Ala
5000	5005	5010
Ile Ile Gln Gly Leu Ile	Ile Asp Ala Phe Gly	Glu Leu Arg Asp
5015	5020	5025
Gln Leu Glu Ser Val Lys	Asp Asn Met Glu Ser	Asn Cys Phe Ile
5030	5035	5040
Cys Gly Met Gly Lys Asp	Phe Phe Asp Ile Val	Pro His Gly Phe
5045	5050	5055
Asp Thr His Val Gln Lys	Glu His Asn Leu Ala	Asn Tyr Met Phe

5060		5065		5070
Phe Leu Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr Gly				
5075		5080		5085
Gln Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp Asp				
5090		5095		5100
Phe Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Glu				
5105		5110		5115
Leu Ser Gly Gly Gly Gly Gly Gly Gly				
5120		5125		
<210>	125			
<211>	5112			
<212>	PRT			
<213>	Drosophila melanogaster			
<220>				
<223>	gi 2160477			
<400>	125			
Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu				
1	5		10	15
Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg				
	20		25	30
Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu				
	35		40	45
Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe				
	50		55	60
Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr				
	65		70	75
Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr				
	85		90	95
Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met				
	100		105	110
Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe				
	115		120	125
Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr				
	130		135	140
Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val				
	145		150	155
Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His				
	165		170	175
Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val				
	180		185	190

Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr	Gly	Ile	Ser	Arg	Met	Lys	195	200	205	
Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val	Leu	Arg	Phe	Phe	His	Gly	210	215	220	
Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	Trp	Gly	Arg	Glu	Ala	Gly	225	230	235	240
Gln	Asn	Ile	Val	Ile	Tyr	Glu	Gly	Gly	Val	Val	Met	Ala	Gln	Ala	Arg	245	250	255	
Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe	260	265	270	
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg	275	280	285	
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu	290	295	300	
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Ser	Trp	Gln	Glu	Lys	Asp	Asp	305	310	315	320
Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	Pro	325	330	335	
Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	Thr	340	345	350	
Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val	355	360	365	
Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met	370	375	380	
Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	Thr	385	390	395	400
Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	Thr	405	410	415	
Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	Gln	420	425	430	
Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn	435	440	445	
Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn	450	455	460	
Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly	465	470	475	480
Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	Thr	485	490	495	
Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	Gln	500	505	510	



Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala Ile  
 515 520 525  
 Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg  
 530 535 540  
 Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly  
 545 550 555 560  
 Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
 565 570 575  
 Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu  
 580 585 590  
 Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser  
 595 600 605  
 Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile  
 610 615 620  
 Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
 625 630 635 640  
 Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg Val  
 645 650 655  
 Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
 660 665 670  
 His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly Trp  
 675 680 685  
 Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys Trp  
 690 695 700  
 Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp Gly  
 705 710 715 720  
 Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala Leu  
 725 730 735  
 Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala Ile  
 740 745 750  
 Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys Val  
 755 760 765  
 Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val  
 770 775 780  
 Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly Asp  
 785 790 795 800  
 His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu Val  
 805 810 815  
 Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe Tyr  
 820 825 830

Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile Glu  
835 840 845  
Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val Thr  
850 855 860  
Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile  
865 870 875 880  
His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly  
885 890 895  
Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe  
900 905 910  
Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala Val  
915 920 925  
Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met Asp  
930 935 940  
Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe  
945 950 955 960  
Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val  
965 970 975  
Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn  
980 985 990  
Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
995 1000 1005  
Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val  
1010 1015 1020  
Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp  
1025 1030 1035  
Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys  
1040 1045 1050  
Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg  
1055 1060 1065  
Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu  
1070 1075 1080  
Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu  
1085 1090 1095  
Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp  
1100 1105 1110  
Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala  
1115 1120 1125  
Phe Asp Gly His Asn Glu Glu Lys Val Tyr Gly Gly Val Ser Glu  
1130 1135 1140

Ser	Phe	Gly	Lys	Gln	Cys	Gly	Pro	Gly	Asp	Ile	Val	Gly	Val	Phe
1145						1150					1155			
Leu	Asp	Leu	Ala	Asp	His	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly	Glu
1160						1165					1170			
Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp	Val
1175						1180					1185			
Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val
1190						1195					1200			
Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	Leu
1205						1210					1215			
Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu	Phe
1295						1300					1305			
Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys	Asn
1310						1315					1320			
Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln	Met
1325						1330					1335			
Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys	Gly
1340						1345					1350			
Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe	Asp
1355						1360					1365			
Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro	Asn
1370						1375					1380			
Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe	Glu
1385						1390					1395			
Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr	Ser
1400						1405					1410			
Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys	Lys
1415						1420					1425			
Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser	Arg
1430						1435					1440			

Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr	Ser
1445						1450					1455			
Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val	Asn
1460						1465					1470			
Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn	Ala
1475						1480					1485			
Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu	Ser
1490						1495					1500			
Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp	Glu
1505						1510					1515			
Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr
1520						1525					1530			
Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val
1535						1540					1545			
Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe	Asn
1550						1555					1560			
Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp	Tyr
1565						1570					1575			
Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val	Val
1580						1585					1590			
Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser	Gly
1595						1600					1605			
Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp	Thr
1610						1615					1620			
Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser
1625						1630					1635			
His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala	Ile
1640						1645					1650			
Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly
1655						1660					1665			
Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr
1670						1675					1680			
Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys	Val
1685						1690					1695			
Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr	Ala
1700						1705					1710			
Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp	Ser
1715						1720					1725			
Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro
1730						1735					1740			

Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp
1745						1750					1755			
Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala	Ala
1760						1765					1770			
Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Gln
1775						1780					1785			
His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Glu	Tyr
1790						1795					1800			
Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala
1805						1810					1815			
Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn
1820						1825					1830			
Glu	Tyr	Ile	Thr	Pro	Leu	Gly	Ala	Glu	Leu	Lys	Glu	Leu	Tyr	Ser
1835						1840					1845			
Asp	Glu	Glu	Met	Gln	His	Ser	Leu	Arg	Ser	Leu	Val	Thr	Glu	Ser
1850						1855					1860			
Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Glu	Pro	Ile	Pro
1865						1870					1875			
Asp	Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val	Val
1880						1885					1890			
Arg	Gln	Phe	Val	Met	Glu	Ala	Leu	Lys	Asp	Ala	Val	Glu	Ile	Asn
1895						1900					1905			
Gln	Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn	Leu
1910						1915					1920			
Phe	Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val	Gly
1925						1930					1935			
Val	Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile	Asp
1940						1945					1950			
Pro	Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp	Glu
1955						1960					1965			
His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys
1970						1975					1980			
Leu	Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln	Leu
1985						1990					1995			
Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe	Val
2000						2005					2010			
Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	Lys
2015						2020					2025			
Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	Glu
2030						2035					2040			

Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe
2045						2050					2055			
Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu
2060						2065					2070			
Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln
2075						2080					2085			
Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly
2090						2095					2100			
Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr
2105						2110					2115			
Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu
2120						2125					2130			
Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys
2135						2140					2145			
Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile
2150						2155					2160			
Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg
2165						2170					2175			
Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr
2180						2185					2190			
Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp
2195						2200					2205			
Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser
2210						2215					2220			
Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val
2225						2230					2235			
Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu
2240						2245					2250			
Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly
2255						2260					2265			
Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val
2270						2275					2280			
Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met
2285						2290					2295			
Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly
2300						2305					2310			
Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu
2315						2320					2325			
Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser
2330						2335					2340			

Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu
	2345					2350					2355			
Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val
	2360					2365					2370			
Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu
	2375					2380					2385			
Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg
	2390					2395					2400			
Tyr	Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser
	2405					2410					2415			
Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg
	2420					2425					2430			
Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu
	2435					2440					2445			
Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser
	2450					2455					2460			
Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly
	2465					2470					2475			
Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp
	2480					2485					2490			
Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu
	2495					2500					2505			
Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu
	2510					2515					2520			
Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ser	Leu	Arg	Ser
	2525					2530					2535			
Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe
	2540					2545					2550			
Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp
	2555					2560					2565			
Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu
	2570					2575					2580			
Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr
	2585					2590					2595			
Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr
	2600					2605					2610			
Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala
	2615					2620					2625			
Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys
	2630					2635					2640			

His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu
2645						2650					2655			
Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met
2660						2665					2670			
Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala
2675						2680					2685			
Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg
2690						2695					2700			
Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val
2705						2710					2715			
Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr
2720						2725					2730			
Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp
2735						2740					2745			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2750						2755					2760			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2765						2770					2775			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2780						2785					2790			
Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met
2795						2800					2805			
Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr
2810						2815					2820			
Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys
2825						2830					2835			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu
2840						2845					2850			
Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys
2855						2860					2865			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg
2870						2875					2880			
Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu
2885						2890					2895			
Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro	Leu
2900						2905					2910			
Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn
2915						2920					2925			
Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro
2930						2935					2940			



Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met
2945						2950					2955			
Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys
2960						2965					2970			
Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln
2975						2980					2985			
Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp
2990						2995					3000			
Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly
3005						3010					3015			
Tyr	Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly
3020						3025					3030			
Gly	Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu
3035						3040					3045			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met
3050						3055					3060			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3065						3070					3075			
Lys	Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3080						3085					3090			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3095						3100					3105			
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys
3110						3115					3120			
Glu	Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu
3125						3130					3135			
Leu	Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3140						3145					3150			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr
3155						3160					3165			
Leu	Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr
3170						3175					3180			
Phe	Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn
3185						3190					3195			
Gln	Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys
3200						3205					3210			
Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val
3215						3220					3225			
Leu	Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser
3230						3235					3240			

Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu
3245						3250					3255			
Ala	Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp
3260						3265					3270			
Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu
3275						3280					3285			
Gly	Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe
3290						3295					3300			
Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn
3305						3310					3315			
Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys
3320						3325					3330			
Met	Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val
3335						3340					3345			
Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His
3350						3355					3360			
Ile	Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe
3365						3370					3375			
Trp	Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn
3380						3385					3390			
His	Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg
3395						3400					3405			
Asn	Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala
3410						3415					3420			
Pro	Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile
3425						3430					3435			
Asn	Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala
3440						3445					3450			
Glu	Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp
3455						3460					3465			
Ser	Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln
3470						3475					3480			
Val	Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp
3485						3490					3495			
Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln
3500						3505					3510			
Arg	Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu
3515						3520					3525			
Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln
3530						3535					3540			

Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile
3545						3550					3555			
Asp	Asn	Met	Ala	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala
3560						3565					3570			
Ile	Ser	Glu	Gly	Ala	Pro	Ala	Val	Gly	Gly	Lys	Val	Lys	Lys	Lys
3575						3580					3585			
Lys	Lys	Asn	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln
3590						3595					3600			
Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly
3605						3610					3615			
Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys
3620						3625					3630			
Lys	Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu
3635						3640					3645			
Phe	Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ser
3650						3655					3660			
Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys
3665						3670					3675			
Thr	Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val
3680						3685					3690			
Asn	Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp
3695						3700					3705			
Arg	Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile
3710						3715					3720			
Asp	His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val
3725						3730					3735			
Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr
3740						3745					3750			
Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala
3755						3760					3765			
Arg	Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln
3770						3775					3780			
Glu	Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu
3785						3790					3795			
Lys	Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro
3800						3805					3810			
Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu
3815						3820					3825			
Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala
3830						3835					3840			

Gln	Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly
3845						3850					3855			
Asp	Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser
3860						3865					3870			
Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln
3875						3880					3885			
Ala	Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His
3890						3895					3900			
Ile	Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr
3905						3910					3915			
Leu	Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile
3920						3925					3930			
Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly
3935						3940					3945			
Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu
3950						3955					3960			
Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly
3965						3970					3975			
Val	Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala
3980						3985					3990			
Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu
3995						4000					4005			
Gly	His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly
4010						4015					4020			
Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu
4025						4030					4035			
Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser
4040						4045					4050			
Ser	Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys
4055						4060					4065			
Ala	Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Ile	Glu	Val
4070						4075					4080			
Ile	Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser
4085						4090					4095			
Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His
4100						4105					4110			
Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu
4115						4120					4125			
Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu
4130						4135					4140			

Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln
4145						4150					4155			
Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile
4160						4165					4170			
Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu
4175						4180					4185			
Ser	Pro	Ser	Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val
4190						4195					4200			
Thr	Pro	Lys	Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr
4205						4210					4215			
Thr	Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn
4220						4225					4230			
His	Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His
4235						4240					4245			
Glu	Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr
4250						4255					4260			
Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe
4265						4270					4275			
Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu
4280						4285					4290			
Gly	Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val
4295						4300					4305			
Tyr	Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro
4310						4315					4320			
Gln	Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr
4325						4330					4335			
Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys
4340						4345					4350			
Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala
4355						4360					4365			
Thr	Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser
4370						4375					4380			
Ser	Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro
4385						4390					4395			
Ile	Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly
4400						4405					4410			
Val	His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val
4415						4420					4425			
Met	Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys
4430						4435					4440			

Ile	Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys
4445						4450					4455			
Val	Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly
4460						4465					4470			
Pro	Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr
4475						4480					4485			
Phe	Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly
4490						4495					4500			
Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly
4505						4510					4515			
Met	Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met
4520						4525					4530			
Glu	Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser
4535						4540					4545			
Gly	Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile
4550						4555					4560			
Val	Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu
4565						4570					4575			
Arg	Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile
4580						4585					4590			
Glu	Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro
4595						4600					4605			
Ala	Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val
4610						4615					4620			
Ser	Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu
4625						4630					4635			
Val	Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val
4640						4645					4650			
Thr	Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu
4655						4660					4665			
Ile	Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser
4670						4675					4680			
Gly	Phe	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met
4685						4690					4695			
Glu	Asp	Glu	Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe
4700						4705					4710			
Tyr	Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu
4715						4720					4725			
Val	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro
4730						4735					4740			

Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu
4745						4750					4755			
Phe	Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe
4760						4765					4770			
Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro
4775						4780					4785			
Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys
4790						4795					4800			
Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly
4805						4810					4815			
Met	Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly
4820						4825					4830			
Ile	Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp
4835						4840					4845			
Lys	Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu
4850						4855					4860			
Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe
4865						4870					4875			
Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu
4880						4885					4890			
Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val
4895						4900					4905			
Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val
4910						4915					4920			
Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp
4925						4930					4935			
Glu	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val
4940						4945					4950			
Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp
4955						4960					4965			
Glu	Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile
4970						4975					4980			
Ile	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu
4985						4990					4995			
Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg
5000						5005					5010			
Asp	Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe
5015						5020					5025			
Ile	Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly
5030						5035					5040			

Phe Asp Thr His Val Gln Lys Glu His Asn Leu Ala Asn Tyr Met  
 5045 5050 5055

Phe Phe Leu Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr  
 5060 5065 5070

Gly Gln Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp  
 5075 5080 5085

Asp Phe Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp  
 5090 5095 5100

Glu Leu Ser Gly Gly Gly Gly Gly Gly  
 5105 5110

<210> 126

<211> 5112

<212> PRT

<213> Drosophila melanogaster

<220>

<223> gi 2160478

<400> 126

Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15

Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30

Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45

Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60

Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80

Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95

Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110

Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125

Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140

Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160

Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175

Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190



Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr	Gly	Ile	Ser	Arg	Met	Lys	
		195					200					205				
Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val	Leu	Arg	Phe	Phe	His	Gly	
	210					215					220					
Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	Trp	Gly	Arg	Glu	Ala	Gly	
225					230					235					240	
Gln	Asn	Ile	Val	Ile	Tyr	Glu	Gly	Gly	Val	Val	Met	Ala	Gln	Ala	Arg	
				245					250					255		
Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe	
			260					265					270			
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg	
		275					280					285				
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu	
	290					295					300					
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Ser	Trp	Gln	Glu	Lys	Asp	Asp	
305					310					315					320	
Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	Pro	
				325					330					335		
Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	Thr	
			340					345					350			
Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val	
		355					360					365				
Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met	
	370					375					380					
Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	Thr	
385					390					395					400	
Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	Thr	
				405					410					415		
Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	Gln	
			420					425					430			
Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn	
		435					440					445				
Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn	
	450					455					460					
Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly	
465					470					475					480	
Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	Thr	
				485					490					495		
Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	Gln	
			500					505					510			

Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala Ile  
 515 520 525  
 Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg  
 530 535 540  
 Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly  
 545 550 555 560  
 Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
 565 570 575  
 Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu  
 580 585 590  
 Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser  
 595 600 605  
 Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile  
 610 615 620  
 Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
 625 630 635 640  
 Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg Val  
 645 650 655  
 Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
 660 665 670  
 His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly Trp  
 675 680 685  
 Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys Trp  
 690 695 700  
 Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp Gly  
 705 710 715 720  
 Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala Leu  
 725 730 735  
 Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala Ile  
 740 745 750  
 Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys Val  
 755 760 765  
 Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val  
 770 775 780  
 Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly Asp  
 785 790 795 800  
 His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu Val  
 805 810 815  
 Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe Tyr  
 820 825 830

Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile Glu  
835 840 845  
Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val Thr  
850 855 860  
Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile  
865 870 875 880  
His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly  
885 890 895  
Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe  
900 905 910  
Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala Val  
915 920 925  
Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met Asp  
930 935 940  
Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe  
945 950 955 960  
Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val  
965 970 975  
Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn  
980 985 990  
Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
995 1000 1005  
Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val  
1010 1015 1020  
Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp  
1025 1030 1035  
Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys  
1040 1045 1050  
Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg  
1055 1060 1065  
Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu  
1070 1075 1080  
Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu  
1085 1090 1095  
Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp  
1100 1105 1110  
Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala  
1115 1120 1125  
Phe Asp Gly His Asn Val Thr Lys Met His Ala Gly Ser Ile Glu  
1130 1135 1140

His	Phe	Gly	Val	Arg	Tyr	Glu	Ala	Gly	Asp	Val	Ile	Gly	Cys	Phe
1145						1150					1155			
Ile	Asp	Val	Lys	Glu	Gln	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly	Glu
1160						1165					1170			
Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp	Val
1175						1180					1185			
Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val
1190						1195					1200			
Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	Leu
1205						1210					1215			
Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu	Phe
1295						1300					1305			
Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys	Asn
1310						1315					1320			
Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln	Met
1325						1330					1335			
Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys	Gly
1340						1345					1350			
Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe	Asp
1355						1360					1365			
Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro	Asn
1370						1375					1380			
Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe	Glu
1385						1390					1395			
Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr	Ser
1400						1405					1410			
Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys	Lys
1415						1420					1425			
Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser	Arg
1430						1435					1440			

Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr	Ser
1445						1450					1455			
Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val	Asn
1460						1465					1470			
Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn	Ala
1475						1480					1485			
Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu	Ser
1490						1495					1500			
Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp	Glu
1505						1510					1515			
Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr
1520						1525					1530			
Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val
1535						1540					1545			
Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe	Asn
1550						1555					1560			
Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp	Tyr
1565						1570					1575			
Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val	Val
1580						1585					1590			
Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser	Gly
1595						1600					1605			
Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp	Thr
1610						1615					1620			
Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser
1625						1630					1635			
His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala	Ile
1640						1645					1650			
Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly
1655						1660					1665			
Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr
1670						1675					1680			
Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys	Val
1685						1690					1695			
Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr	Ala
1700						1705					1710			
Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp	Ser
1715						1720					1725			
Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro
1730						1735					1740			

Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp
1745						1750					1755			
Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala	Ala
1760						1765					1770			
Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Gln
1775						1780					1785			
His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Glu	Tyr
1790						1795					1800			
Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala
1805						1810					1815			
Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn
1820						1825					1830			
Glu	Tyr	Ile	Thr	Pro	Leu	Gly	Ala	Glu	Leu	Lys	Glu	Leu	Tyr	Ser
1835						1840					1845			
Asp	Glu	Glu	Met	Gln	His	Ser	Leu	Arg	Ser	Leu	Val	Thr	Glu	Ser
1850						1855					1860			
Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Glu	Pro	Ile	Pro
1865						1870					1875			
Asp	Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val	Val
1880						1885					1890			
Arg	Gln	Phe	Val	Met	Glu	Ala	Leu	Lys	Asp	Ala	Val	Glu	Ile	Asn
1895						1900					1905			
Gln	Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn	Leu
1910						1915					1920			
Phe	Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val	Gly
1925						1930					1935			
Val	Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile	Asp
1940						1945					1950			
Pro	Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp	Glu
1955						1960					1965			
His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys
1970						1975					1980			
Leu	Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln	Leu
1985						1990					1995			
Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe	Val
2000						2005					2010			
Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	Lys
2015						2020					2025			
Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	Glu
2030						2035					2040			

Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe
2045						2050					2055			
Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu
2060						2065					2070			
Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln
2075						2080					2085			
Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly
2090						2095					2100			
Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr
2105						2110					2115			
Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu
2120						2125					2130			
Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys
2135						2140					2145			
Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile
2150						2155					2160			
Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg
2165						2170					2175			
Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr
2180						2185					2190			
Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp
2195						2200					2205			
Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser
2210						2215					2220			
Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val
2225						2230					2235			
Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu
2240						2245					2250			
Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly
2255						2260					2265			
Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val
2270						2275					2280			
Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met
2285						2290					2295			
Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly
2300						2305					2310			
Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu
2315						2320					2325			
Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser
2330						2335					2340			

Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu
2345						2350					2355			
Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val
2360						2365					2370			
Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu
2375						2380					2385			
Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg
2390						2395					2400			
Tyr	Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser
2405						2410					2415			
Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg
2420						2425					2430			
Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu
2435						2440					2445			
Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser
2450						2455					2460			
Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly
2465						2470					2475			
Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp
2480						2485					2490			
Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu
2495						2500					2505			
Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu
2510						2515					2520			
Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ser	Leu	Arg	Ser
2525						2530					2535			
Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe
2540						2545					2550			
Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp
2555						2560					2565			
Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu
2570						2575					2580			
Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr
2585						2590					2595			
Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr
2600						2605					2610			
Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala
2615						2620					2625			
Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys
2630						2635					2640			



His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu
2645						2650					2655			
Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met
2660						2665					2670			
Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala
2675						2680					2685			
Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg
2690						2695					2700			
Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val
2705						2710					2715			
Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr
2720						2725					2730			
Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp
2735						2740					2745			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2750						2755					2760			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2765						2770					2775			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2780						2785					2790			
Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met
2795						2800					2805			
Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr
2810						2815					2820			
Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys
2825						2830					2835			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu
2840						2845					2850			
Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys
2855						2860					2865			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg
2870						2875					2880			
Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu
2885						2890					2895			
Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro	Leu
2900						2905					2910			
Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn
2915						2920					2925			
Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro
2930						2935					2940			

Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met
2945						2950					2955			
Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys
2960						2965					2970			
Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln
2975						2980					2985			
Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp
2990						2995					3000			
Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly
3005						3010					3015			
Tyr	Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly
3020						3025					3030			
Gly	Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu
3035						3040					3045			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met
3050						3055					3060			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3065						3070					3075			
Lys	Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3080						3085					3090			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3095						3100					3105			
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys
3110						3115					3120			
Glu	Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu
3125						3130					3135			
Leu	Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3140						3145					3150			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr
3155						3160					3165			
Leu	Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr
3170						3175					3180			
Phe	Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn
3185						3190					3195			
Gln	Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys
3200						3205					3210			
Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val
3215						3220					3225			
Leu	Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser
3230						3235					3240			

Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu
3245						3250					3255			
Ala	Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp
3260						3265					3270			
Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu
3275						3280					3285			
Gly	Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe
3290						3295					3300			
Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn
3305						3310					3315			
Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys
3320						3325					3330			
Met	Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val
3335						3340					3345			
Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His
3350						3355					3360			
Ile	Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe
3365						3370					3375			
Trp	Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn
3380						3385					3390			
His	Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg
3395						3400					3405			
Asn	Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala
3410						3415					3420			
Pro	Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile
3425						3430					3435			
Asn	Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala
3440						3445					3450			
Glu	Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp
3455						3460					3465			
Ser	Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln
3470						3475					3480			
Val	Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp
3485						3490					3495			
Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln
3500						3505					3510			
Arg	Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu
3515						3520					3525			
Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln
3530						3535					3540			

Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile
3545						3550					3555			
Asp	Asn	Met	Ala	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Ser	Ala
3560						3565					3570			
Ile	Ser	Glu	Gly	Ala	Pro	Ala	Val	Gly	Gly	Lys	Val	Lys	Lys	Lys
3575						3580					3585			
Lys	Lys	Asn	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln
3590						3595					3600			
Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly
3605						3610					3615			
Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys
3620						3625					3630			
Lys	Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu
3635						3640					3645			
Phe	Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ser
3650						3655					3660			
Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys
3665						3670					3675			
Thr	Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val
3680						3685					3690			
Asn	Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp
3695						3700					3705			
Arg	Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile
3710						3715					3720			
Asp	His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val
3725						3730					3735			
Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr
3740						3745					3750			
Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala
3755						3760					3765			
Arg	Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln
3770						3775					3780			
Glu	Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu
3785						3790					3795			
Lys	Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro
3800						3805					3810			
Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu
3815						3820					3825			
Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala
3830						3835					3840			

Gln	Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly
3845						3850					3855			
Asp	Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser
3860						3865					3870			
Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln
3875						3880					3885			
Ala	Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His
3890						3895					3900			
Ile	Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr
3905						3910					3915			
Leu	Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile
3920						3925					3930			
Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly
3935						3940					3945			
Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu
3950						3955					3960			
Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly
3965						3970					3975			
Val	Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala
3980						3985					3990			
Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu
3995						4000					4005			
Gly	His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly
4010						4015					4020			
Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu
4025						4030					4035			
Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser
4040						4045					4050			
Ser	Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys
4055						4060					4065			
Ala	Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Ile	Glu	Val
4070						4075					4080			
Ile	Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser
4085						4090					4095			
Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His
4100						4105					4110			
Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu
4115						4120					4125			
Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu
4130						4135					4140			

Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln
4145						4150					4155			
Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile
4160						4165					4170			
Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu
4175						4180					4185			
Ser	Pro	Ser	Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val
4190						4195					4200			
Thr	Pro	Lys	Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr
4205						4210					4215			
Thr	Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn
4220						4225					4230			
His	Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His
4235						4240					4245			
Glu	Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr
4250						4255					4260			
Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe
4265						4270					4275			
Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu
4280						4285					4290			
Gly	Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val
4295						4300					4305			
Tyr	Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro
4310						4315					4320			
Gln	Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr
4325						4330					4335			
Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys
4340						4345					4350			
Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala
4355						4360					4365			
Thr	Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser
4370						4375					4380			
Ser	Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro
4385						4390					4395			
Ile	Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly
4400						4405					4410			
Val	His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val
4415						4420					4425			
Met	Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys
4430						4435					4440			

Ile	Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys
4445						4450					4455			
Val	Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly
4460						4465					4470			
Pro	Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr
4475						4480					4485			
Phe	Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly
4490						4495					4500			
Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly
4505						4510					4515			
Met	Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met
4520						4525					4530			
Glu	Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser
4535						4540					4545			
Gly	Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile
4550						4555					4560			
Val	Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu
4565						4570					4575			
Arg	Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile
4580						4585					4590			
Glu	Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro
4595						4600					4605			
Ala	Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val
4610						4615					4620			
Ser	Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu
4625						4630					4635			
Val	Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val
4640						4645					4650			
Thr	Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu
4655						4660					4665			
Ile	Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser
4670						4675					4680			
Gly	Phe	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Met
4685						4690					4695			
Glu	Asp	Glu	Ile	Pro	Glu	Leu	Val	His	Val	Asp	Glu	Asp	Phe	Phe
4700						4705					4710			
Tyr	Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu
4715						4720					4725			
Val	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro
4730						4735					4740			

Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu
4745						4750					4755			
Phe	Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe
4760						4765					4770			
Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro
4775						4780					4785			
Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Gln	Lys
4790						4795					4800			
Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Leu	Leu	Gly
4805						4810					4815			
Met	Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly
4820						4825					4830			
Ile	Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp
4835						4840					4845			
Lys	Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu
4850						4855					4860			
Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe
4865						4870					4875			
Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu
4880						4885					4890			
Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val
4895						4900					4905			
Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val
4910						4915					4920			
Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp
4925						4930					4935			
Glu	Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val
4940						4945					4950			
Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp
4955						4960					4965			
Glu	Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile
4970						4975					4980			
Ile	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu
4985						4990					4995			
Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg
5000						5005					5010			
Asp	Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe
5015						5020					5025			
Ile	Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly
5030						5035					5040			



Phe Asp Thr His Val Gln Lys Glu His Asn Leu Ala Asn Tyr Met  
 5045 5050 5055  
 Phe Phe Leu Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr  
 5060 5065 5070  
 Gly Gln Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp  
 5075 5080 5085  
 Asp Phe Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp  
 5090 5095 5100  
 Glu Leu Ser Gly Gly Gly Gly Gly Gly  
 5105 5110

<210> 127  
 <211> 15387  
 <212> DNA  
 <213> *Heliothis virescens*

<220>  
 <221> CDS  
 <222> (1)..(15384)  
 <223>

<220>  
 <223> pXL-Hv7

<400> 127  
 atg gcg gaa gca gag ggg gga gca agc gag caa gat gat gtt tca ttc 48  
 Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe  
 1 5 10 15  
 ttg cgt acg gaa gac atg gtg tgc ctg tcg tgc aca gcg aca gga gag 96  
 Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
 20 25 30  
 agg gtg tgc ctg gct gcc gaa ggt ttc ggc aac cgg cac tgc ttc ttg 144  
 Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
 35 40 45  
 gag aat att gcc gac aag aac ata ccg cct gat ctg tcg cag tgt gtg 192  
 Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
 50 55 60  
 ttt gtc atc gaa cag gcg ctt tca gta aga gct tta caa gag ttg gta 240  
 Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
 65 70 75 80  
 aca gct gcg ggc tct gaa act ggt aaa ggt acc ggt tct ggt cat cgt 288  
 Thr Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg  
 85 90 95  
 acg cta cta tac ggc aat gct att ctt ttg cga cat ctt aac agt gat 336  
 Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Leu Asn Ser Asp  
 100 105 110  
 atg tac ctg gcc tgc ctg tcg aca tca tcc tcc cag gat aag ctg gcc 384

Met	Tyr	Leu	Ala	Cys	Leu	Ser	Thr	Ser	Ser	Ser	Gln	Asp	Lys	Leu	Ala	
		115					120					125				
ttt	gac	gtg	ggc	ctg	caa	cag	cac	tcc	cag	ggc	gaa	gcc	tgc	tgg	tgg	432
Phe	Asp	Val	Gly	Leu	Gln	Gln	His	Ser	Gln	Gly	Glu	Ala	Cys	Trp	Trp	
	130					135					140					
acc	ctg	cat	cct	gcc	agc	aaa	cag	aga	tcc	gag	ggc	gag	aag	gtg	cga	480
Thr	Leu	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu	Gly	Glu	Lys	Val	Arg	
145					150					155					160	
gtc	gga	gat	gac	ttg	att	ctg	gtc	tcc	gtg	gct	act	gag	aga	tac	ttg	528
Val	Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ala	Thr	Glu	Arg	Tyr	Leu	
				165					170					175		
cac	aca	acg	aaa	gag	aac	gaa	gta	tcg	ata	gtg	aac	gcg	tcg	ttc	cac	576
His	Thr	Thr	Lys	Glu	Asn	Glu	Val	Ser	Ile	Val	Asn	Ala	Ser	Phe	His	
			180					185					190			
gtg	acg	cac	tgg	tcg	gta	cag	ccc	tat	ggc	act	ggc	ata	tcg	agg	atg	624
Val	Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr	Gly	Ile	Ser	Arg	Met	
	195						200					205				
aag	tat	gta	ggc	tat	gta	ttc	gga	ggc	gat	gtg	ctg	cgg	ttc	ttc	cat	672
Lys	Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val	Leu	Arg	Phe	Phe	His	
	210					215					220					
gga	ggc	gac	gag	tgt	ctc	act	ata	cct	agc	acc	tgg	aca	aag	gat	ggg	720
Gly	Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	Trp	Thr	Lys	Asp	Gly	
225					230					235					240	
ggg	caa	aat	atc	gta	gtg	tac	gaa	gga	ggc	tcg	gtg	atg	tct	caa	gcc	768
Gly	Gln	Asn	Ile	Val	Val	Tyr	Glu	Gly	Gly	Ser	Val	Met	Ser	Gln	Ala	
				245					250					255		
cgt	tct	cta	tgg	cgc	ctg	gaa	ctg	gct	aga	acc	aag	tgg	gcc	gga	ggc	816
Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Ala	Gly	Gly	
			260					265					270			
ttc	att	aac	tgg	tac	cat	cct	atg	agg	att	cgg	cac	atc	act	act	gga	864
Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	
		275					280					285				
aga	tat	ctc	gga	gta	aac	gac	cag	aat	gag	ctg	tat	tta	gtt	agc	aga	912
Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu	Tyr	Leu	Val	Ser	Arg	
	290					295					300					
gag	gaa	gcc	aca	aca	gct	tcc	tgt	gcc	ttc	tgc	ctg	cgt	cag	gag	aag	960
Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys	Leu	Arg	Gln	Glu	Lys	
305					310					315					320	
gat	gat	cag	aag	caa	gtg	tta	gaa	gac	aag	gac	ttg	gag	gtc	ata	ggc	1008
Asp	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	
				325					330					335		
gcg	ccc	atc	atc	aaa	tat	ggc	gac	tcc	acc	gtc	att	gtg	cag	cat	tcc	1056
Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	Ile	Val	Gln	His	Ser	
				340				345					350			
gag	act	ggc	ttg	tgg	ctg	tct	tat	aag	tct	tac	gaa	acg	aag	aag	aag	1104

Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys	
355 360 365	
gga gtg ggt aaa gta gaa gag aag caa gcg att ctc cac gag gaa ggc	1152
Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly	
370 375 380	
aag atg gac gat ggc ctc gac ttc tcc agg tca cag gag gaa gaa tct	1200
Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser	
385 390 395 400	
agg act gct cga gtt atc agg aag tgt tct tcg ctg ttc act aag ttt	1248
Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Lys Phe	
405 410 415	
atc aat ggt ctg gaa act cta caa gag aac cgt cgt cac tcg atg ttc	1296
Ile Asn Gly Leu Thr Leu Gln Glu Asn Arg Arg His Ser Met Phe	
420 425 430	
ttc gcg tca gtg aac ctg ggc gag atg gtg atg tgc ctc gag gat ctc	1344
Phe Ala Ser Val Asn Leu Gly Glu Met Val Met Cys Leu Glu Asp Leu	
435 440 445	
atc aac tac ttc gca cag ccc gat gag gat atg gaa cac gaa gaa aaa	1392
Ile Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met Glu His Glu Glu Lys	
450 455 460	
caa aac aaa ttc cgg gca ctc cga aac cgt cag gac ctg ttc caa gag	1440
Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu	
465 470 475 480	
gaa ggc ata ctg aac ctg atc ctc gaa gct ata gac aag atc aac gtc	1488
Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Val	
485 490 495	
atc acg tcc cag ggg ttc ctc gct gga ttc ctg gcg gga gac gaa tct	1536
Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu Ala Gly Asp Glu Ser	
500 505 510	
gga cag agc tgg gaa atg ata tct gga tat ttg tat cag ttg ctg gcg	1584
Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala	
515 520 525	
gca ata ata aag ggc aac cac acg aac tgc gcg cag ttc gcg aac tcg	1632
Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser	
530 535 540	
aac cgc ctc aac tgg ctg ttc tcg cgc ctc ggc tcg cag gcc tcg ggc	1680
Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Gly	
545 550 555 560	
gag ggc acc ggc atg ctc gac gtg ctg cac tgc gtg ctt ata gac tcg	1728
Glu Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser	
565 570 575	
cct gaa gct ctc aat atg atg agg gac gaa cac ata aaa gtg ata atc	1776
Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile	
580 585 590	
tct cta tta gaa aag cat ggg cgc gac cct aaa gta cta gat gtg cta	1824

Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	
		595					600					605				
tgt	tcg	ctg	tgc	gtc	ggc	aac	ggc	gtc	gcg	gtg	cgc	tcg	tca	cag	aac	1872
Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	
		610				615					620					
aac	atc	tgt	gac	tac	tta	ctg	ccc	ggc	aag	aac	ctg	ttg	ctg	caa	act	1920
Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	
		625			630					635					640	
gcg	ctc	gtg	gat	cac	gta	tct	agt	gtc	cgt	ccg	aac	atc	ttc	gtg	ggc	1968
Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	
				645					650					655		
cga	gta	gaa	ggg	tcg	gca	gtg	tac	cgc	aaa	tgg	tac	ttc	gag	gtg	act	2016
Arg	Val	Glu	Ser	Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Phe	Glu	Val	Thr	
			660					665					670			
atg	gac	cac	ata	gag	aag	acc	aca	cat	atg	atg	cca	cat	cta	cgc	ata	2064
Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	
		675					680					685				
gga	tgg	gcc	aac	act	act	ggc	tat	gtc	cca	tac	ccg	ggc	ggc	ggc	gag	2112
Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	
		690				695					700					
aaa	tgg	gga	ggc	aac	ggc	gtg	gga	gat	gac	ctg	tac	tcg	tac	ggg	ttc	2160
Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Tyr	Gly	Phe	
		705			710					715					720	
gac	ggc	gcc	tac	ctc	tgg	tcc	ggg	ggg	agg	aag	act	ccc	gtc	aat	agg	2208
Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	Thr	Pro	Val	Asn	Arg	
				725					730					735		
act	cat	gct	gaa	gag	cct	tat	att	aga	aaa	ggc	gac	gtg	ata	ggc	tgc	2256
Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Cys	
			740					745					750			
gca	ttg	gac	ctg	acg	gta	ccc	ata	atc	aac	ttc	atg	ttc	aac	gga	gtg	2304
Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	Met	Phe	Asn	Gly	Val	
		755				760						765				
cgg	gtg	acg	gga	tcc	ttc	acc	aac	ttc	aat	ctg	gaa	ggc	atg	ttc	ttc	2352
Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	Glu	Gly	Met	Phe	Phe	
		770				775					780					
ccg	gtc	atc	agc	tgc	tct	agt	aag	ctg	agt	tgt	cgg	ttc	ctg	ctg	ggc	2400
Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Leu	Gly	
					790					795					800	
gga	gaa	cac	ggc	cgt	ctc	cgg	tac	gcg	gct	cca	gaa	ggc	tac	tct	ccc	2448
Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro	Glu	Gly	Tyr	Ser	Pro	
				805					810					815		
ttg	gtg	gag	tct	ctc	ctg	ccg	cag	cag	atc	ctc	agc	ctg	gag	ccg	tgc	2496
Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Glu	Pro	Cys	
			820					825					830			
ttc	tac	ttc	ggc	aac	ctg	tcc	aag	cgg	gcc	ttg	gct	gga	cct	ccg	cta	2544

Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	Ala	Gly	Pro	Pro	Leu	
		835					840					845				
gta	cag	gac	gat	acg	gcc	ttc	gtg	cct	aca	cct	gtt	gat	act	tta	cag	2592
Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	Val	Asp	Thr	Leu	Gln	
	850					855					860					
att	act	ctg	cct	aca	tat	gtg	gaa	caa	att	aga	gat	aag	cta	gct	gaa	2640
Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	Asp	Lys	Leu	Ala	Glu	
865					870					875					880	
aat	ata	cac	gaa	atg	tgg	gct	atg	aat	aag	atc	gaa	gca	ggc	tgg	atg	2688
Asn	Ile	His	Glu	Met	Trp	Ala	Met	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Met	
				885					890					895		
tac	ggc	gac	cag	aga	gaa	gac	ttg	cac	aag	atc	cac	ccc	tgc	ctc	gtg	2736
Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His	Lys	Ile	His	Pro	Cys	Leu	Val	
			900					905					910			
ccc	ttc	gag	cga	ctc	cca	cct	gct	gag	aaa	cga	tac	gac	ata	caa	ctc	2784
Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ile	Gln	Leu	
	915						920					925				
gct	gtg	cag	aca	ctc	aag	act	atc	ctg	gct	ctg	ggc	tac	tac	atc	agc	2832
Ala	Val	Gln	Thr	Leu	Lys	Thr	Ile	Leu	Ala	Leu	Gly	Tyr	Tyr	Ile	Ser	
	930					935					940					
tta	gat	aag	cct	cca	gca	cgc	atc	cgc	aac	gtt	cgt	ctg	ccc	aac	gaa	2880
Leu	Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Asn	Val	Arg	Leu	Pro	Asn	Glu	
945					950					955					960	
cct	ttc	atg	cag	tcc	aac	ggc	tac	aag	cca	gca	cca	ctc	gac	ctg	agt	2928
Pro	Phe	Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	
				965				970						975		
gct	gtc	acc	ctg	aca	ccc	aag	atg	gat	gag	cta	gta	gac	cag	ctg	gct	2976
Ala	Val	Thr	Leu	Thr	Pro	Lys	Met	Asp	Glu	Leu	Val	Asp	Gln	Leu	Ala	
			980					985					990			
gag	aac	acc	cac	aac	ctt	tgg	gcc	agg	gag	agg	ata	cag	cag	gga	tgg	3024
Glu	Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	
	995						1000					1005				
act	tat	gga	ctt	aat	gag	gac	tcg	gac	atg	cat	cgt	tcc	ccg	cac		3069
Thr	Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Asp	Met	His	Arg	Ser	Pro	His		
	1010					1015					1020					
ctg	gtg	cca	tac	ccg	aag	gtt	gac	gat	gcc	atc	aag	aag	gcc	aac		3114
Leu	Val	Pro	Tyr	Pro	Lys	Val	Asp	Asp	Ala	Ile	Lys	Lys	Ala	Asn		
	1025					1030					1035					
agg	gac	aca	gcc	tcg	gag	act	gtg	agg	acc	ctg	ctg	gtc	tac	ggg		3159
Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly		
	1040					1045					1050					
tat	atg	ctg	gac	ccg	cct	act	ggg	gag	cag	cat	gaa	gca	ctc	ttg		3204
Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln	His	Glu	Ala	Leu	Leu		
	1055					1060					1065					
ttg	gaa	gcg	tca	aaa	cag	aag	caa	gca	gac	ttc	aga	aca	tac	cgc		3249

Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp	Phe	Arg	Thr	Tyr	Arg	
1070						1075					1080				
gct	gag	aag	aac	tat	gcc	gtc	agc	tct	ggg	aag	tgg	tac	ttc	gag	3294
Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	
1085						1090					1095				
ttt	gag	atc	tta	acg	gct	gga	cct	atg	agg	gtc	ggc	tgg	gct	cac	3339
Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	His	
1100						1105					1110				
gct	gat	atg	gca	cca	gga	atg	atg	ctc	gga	caa	gac	gag	aac	tct	3384
Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly	Gln	Asp	Glu	Asn	Ser	
1115						1120					1125				
tgg	gca	ttt	gat	ggg	tac	aat	gag	gaa	aaa	gtg	tac	agc	ggg	aac	3429
Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Val	Tyr	Ser	Gly	Asn	
1130						1135					1140				
act	gag	tct	ttc	ggc	aag	caa	tgg	gct	gtt	ggg	gac	gta	gtg	ggg	3474
Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val	Gly	Asp	Val	Val	Gly	
1145						1150					1155				
gtg	ttc	cta	gat	ctc	att	gat	aag	acg	ata	agt	ttc	tca	ctc	aat	3519
Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile	Ser	Phe	Ser	Leu	Asn	
1160						1165					1170				
ggg	gag	ttg	ttg	atg	gat	gct	ctt	ggc	gga	gag	act	acg	ttt	gct	3564
Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	
1175						1180					1185				
gat	gtc	cag	ggg	gac	aac	ttt	gta	cca	gct	tgc	aca	ctt	ggg	gtg	3609
Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val	
1190						1195					1200				
ggc	caa	aaa	gcc	agg	tta	aca	tat	ggc	caa	gat	gtg	aat	act	ctg	3654
Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	Asp	Val	Asn	Thr	Leu	
1205						1210					1215				
aaa	tac	ttc	aca	aca	tgt	ggg	ctt	cag	gag	gga	tat	gaa	cca	ttt	3699
Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe	
1220						1225					1230				
tgc	gtc	aat	atg	aag	aga	gac	gtg	act	cac	tgg	tac	acc	aag	gac	3744
Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp	
1235						1240					1245				
cag	ccg	atc	ttc	gag	aat	act	gat	gag	atg	atc	gac	acc	agg	att	3789
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met	Ile	Asp	Thr	Arg	Ile	
1250						1255					1260				
gat	gtg	acc	agg	ata	cca	gct	ggg	tca	gat	aca	cct	cca	tgc	ctc	3834
Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu	
1265						1270					1275				
aag	att	tcc	cac	aac	acg	ttc	gag	acg	atg	gag	aaa	gct	aac	tgg	3879
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp	
1280						1285					1290				
gag	ttc	tta	cgt	ctc	tca	ctg	cct	gtt	atc	tgc	cat	aac	gag	ttc	3924

Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Asn	Glu	Phe	
	1295					1300					1305				
att	gac	gag	gca	gaa	aaa	gcc	aga	cgt	tg	gta	gaa	atc	aag	gac	3969
Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp	Val	Glu	Ile	Lys	Asp	
	1310					1315					1320				
cgt	caa	cag	atc	cta	atg	aaa	gag	gca	gtt	gaa	gct	cag	atg	ccc	4014
Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	Glu	Ala	Gln	Met	Pro	
	1325					1330					1335				
gcc	cat	att	gac	cag	atc	atg	agg	agc	gg	ttc	acc	atg	aac	gat	4059
Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly	Phe	Thr	Met	Asn	Asp	
	1340					1345					1350				
atc	aaa	gg	ttg	cac	tac	gaa	gac	a	cag	gaa	gag	ttg	ccc	agc	4104
Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln	Glu	Glu	Leu	Pro	Ser	
	1355					1360					1365				
tcc	aag	atg	aag	cgc	ctg	cct	tca	agg	cca	cca	cgt	aag	gga	tcc	4149
Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser	
	1370					1375					1380				
atg	aca	aga	gg	gtt	act	ata	caa	a	tac	a	a	ttg	caa	cca	4194
Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr	Asn	Asn	Leu	Gln	Pro	
	1385					1390					1395				
ggc	caa	gtc	aac	ggc	atg	cac	cgg	tcg	acc	agt	gaa	gct	gaa	atg	4239
Gly	Gln	Val	Asn	Gly	Met	His	Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met	
	1400					1405					1410				
gcc	aag	tat	gac	ttg	gga	gcg	caa	gg	ttg	acg	cct	gat	gat	aag	4284
Ala	Lys	Tyr	Asp	Leu	Gly	Ala	Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys	
	1415					1420					1425				
aag	gac	aag	agg	gga	cga	tcg	cct	ttc	aag	ttc	ttc	aga	agc	aag	4329
Lys	Asp	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys	
	1430					1435					1440				
cgc	ggc	gaa	agc	agt	gat	cgt	gct	aaa	tcc	cgt	aaa	tcc	aaa	aca	4374
Arg	Gly	Glu	Ser	Ser	Asp	Arg	Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr	
	1445					1450					1455				
cca	gac	ccc	ttc	agt	gat	acc	gaa	gta	tca	cca	gaa	cgt	gg	gct	4419
Pro	Asp	Pro	Phe	Ser	Asp	Thr	Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala	
	1460					1465					1470				
cga	agg	cct	aac	cct	cag	atc	aaa	gtg	tca	cag	gcc	a	caa	aga	4464
Arg	Arg	Pro	Asn	Pro	Gln	Ile	Lys	Val	Ser	Gln	Ala	Asn	Gln	Arg	
	1475					1480					1485				
tat	aac	ggc	atg	aac	gcg	cgt	cct	agc	agg	acc	aac	ttg	tat	ggg	4509
Tyr	Asn	Gly	Met	Asn	Ala	Arg	Pro	Ser	Arg	Thr	Asn	Leu	Tyr	Gly	
	1490					1495					1500				
agc	caa	gtt	gg	ttg	aac	atg	gcg	acg	ccc	acg	caa	gac	agg	aag	4554
Ser	Gln	Val	Gly	Leu	Asn	Met	Ala	Thr	Pro	Thr	Gln	Asp	Arg	Lys	
	1505					1510					1515				
cag	atg	acg	acc	agc	act	ctc	gcg	cag	tcg	gct	acg	gaa	act	gtc	4599

Gln Met	Thr Thr	Ser Thr	Leu	Ala Gln	Ser Ala	Thr	Glu Thr	Val		
1520			1525			1530				
ggc aat	gag atc	ttc gat	gca	gag tgt	ttg aag	ctc	atc aat	gag	4644	
Gly Asn	Glu Ile	Phe Asp	Ala	Glu Cys	Leu Lys	Leu	Ile Asn	Glu		
1535			1540			1545				
tac ttt	tat gga	gtc agg	atc	tac cca	ggt caa	gac	cca acc	cac	4689	
Tyr Phe	Tyr Gly	Val Arg	Ile	Tyr Pro	Gly Gln	Asp	Pro Thr	His		
1550			1555			1560				
gtg tac	atc ggc	tgg gtg	acc	acc cag	tac cac	ttg	cac tct	aag	4734	
Val Tyr	Ile Gly	Trp Val	Thr	Thr Gln	Tyr His	Leu	His Ser	Lys		
1565			1570			1575				
gac ttc	aac cag	agc aag	gtc	acc aag	tcc tct	gtc	atc atc	act	4779	
Asp Phe	Asn Gln	Ser Lys	Val	Thr Lys	Ser Ser	Val	Ile Ile	Thr		
1580			1585			1590				
gat gat	tac gat	agg gtt	gtt	gag aac	gta aac	cgg	caa tcg	tgc	4824	
Asp Asp	Tyr Asp	Arg Val	Val	Glu Asn	Val Asn	Arg	Gln Ser	Cys		
1595			1600			1605				
tac atg	gtg cga	gct gat	gag	ctg tac	aac gag	gtg	atg gcg	gaa	4869	
Tyr Met	Val Arg	Ala Asp	Glu	Leu Tyr	Asn Glu	Val	Met Ala	Glu		
1610			1615			1620				
gcc acg	gcc aag	ggt gcc	tcg	caa ggc	atg ttc	atc	ggc tgc	tcc	4914	
Ala Thr	Ala Lys	Gly Ala	Ser	Gln Gly	Met Phe	Ile	Gly Cys	Ser		
1625			1630			1635				
gtc gac	acc tcc	acc ggc	agc	gtg tcc	ttc acc	tgt	gag ggg	aag	4959	
Val Asp	Thr Ser	Thr Gly	Ser	Val Ser	Phe Thr	Cys	Glu Gly	Lys		
1640			1645			1650				
gac acc	agc ttc	aag ttt	aag	atg gaa	cca gaa	aca	aaa ttg	ttc	5004	
Asp Thr	Ser Phe	Lys Phe	Lys	Met Glu	Pro Glu	Thr	Lys Leu	Phe		
1655			1660			1665				
ccc gcg	atc ttc	gta gaa	gcg	acc tcc	aag gag	atc	ctg cag	ata	5049	
Pro Ala	Ile Phe	Val Glu	Ala	Thr Ser	Lys Glu	Ile	Leu Gln	Ile		
1670			1675			1680				
gag ctg	ggc aga	tca gcc	acc	agt ctg	cca cta	tca	gcc gct	gta	5094	
Glu Leu	Gly Arg	Ser Ala	Thr	Ser Leu	Pro Leu	Ser	Ala Ala	Val		
1685			1690			1695				
cta cct	acg agt	gat aag	cat	gtc ata	cca cag	ttc	ccg ccg	agg	5139	
Leu Pro	Thr Ser	Asp Lys	His	Val Ile	Pro Gln	Phe	Pro Pro	Arg		
1700			1705			1710				
ttg aag	gtg cag	tgc ttg	aaa	cca cat	cag tgg	gct	agg gta	ccg	5184	
Leu Lys	Val Gln	Cys Leu	Lys	Pro His	Gln Trp	Ala	Arg Val	Pro		
1715			1720			1725				
aac caa	tca cta	caa gtc	cac	gct ctg	aag ttg	tcc	gac atc	cgc	5229	
Asn Gln	Ser Leu	Gln Val	His	Ala Leu	Lys Leu	Ser	Asp Ile	Arg		
1730			1735			1740				
ggg tgg	tcg atg	ctg tgt	gaa	gac gcc	gtt tct	atg	cta gct	tta	5274	



Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu	
	1745					1750					1755				
cat	ata	ccg	gag	gaa	gat	cgc	tgc	ata	gac	att	ttg	gag	ccg	ata	5319
His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Pro	Ile	
	1760					1765					1770				
gaa	atg	gac	aaa	ctt	cta	agt	ttc	cat	tct	cac	acc	ctc	acg	tta	5364
Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu	
	1775					1780					1785				
tac	gct	gct	tta	tgt	tac	cag	agt	aac	tac	agg	gcg	gcc	cac	gct	5409
Tyr	Ala	Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	
	1790					1795					1800				
ctg	tgc	acg	cac	gtg	gac	cag	aag	cag	ctg	ctg	tac	gcg	atc	cag	5454
Leu	Cys	Thr	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Gln	
	1805					1810					1815				
tcg	cag	tac	atg	tcg	ggc	ccg	ctg	cgc	cag	ggc	ttc	tac	gat	ctg	5499
Ser	Gln	Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	
	1820					1825					1830				
ctc	ata	gca	ctg	cat	ctc	gag	tcg	cat	gcc	acc	acc	atg	gag	gcg	5544
Leu	Ile	Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Ala	
	1835					1840					1845				
tgt	aag	aac	gag	ttc	gtg	atc	ccg	ctg	ggc	ccg	gag	ctg	aag	gcg	5589
Cys	Lys	Asn	Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala	
	1850					1855					1860				
ctg	tac	gag	gag	ccc	gac	atg	gga	cac	tcg	ctg	cgc	tcg	ctg	cag	5634
Leu	Tyr	Glu	Glu	Pro	Asp	Met	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	
	1865					1870					1875				
acc	gag	agc	gtg	cgc	ccg	cag	atg	aag	atg	acc	gat	atc	gct	gaa	5679
Thr	Glu	Ser	Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu	
	1880					1885					1890				
agt	ata	acc	gag	ata	agc	aac	cta	tac	tcg	ccg	tac	ttc	ccg	ctg	5724
Ser	Ile	Thr	Glu	Ile	Ser	Asn	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	
	1895					1900					1905				
gag	gtg	gcg	cgc	gag	ttc	gtg	atg	cag	gcg	ctg	gct	gaa	gcc	gtg	5769
Glu	Val	Ala	Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val	
	1910					1915					1920				
gag	acc	aac	cag	gtg	cac	aac	cgg	gat	cct	gtc	ggg	ggg	agc	aat	5814
Glu	Thr	Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Val	Gly	Gly	Ser	Asn	
	1925					1930					1935				
gag	aac	ctg	ttc	ctg	cct	cta	ata	aag	ttg	gtg	gac	cgt	ctc	ctg	5859
Glu	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu	
	1940					1945					1950				
ctg	gtc	ggc	atg	atg	cgc	gac	gaa	gat	gtg	gag	aag	cta	ctc	atc	5904
Leu	Val	Gly	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	
	1955					1960					1965				
atg	acc	aac	cct	gag	aca	tgg	gac	ccc	tcg	ttt	gac	aaa	gag	ggt	5949

Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	Glu	Gly	
	1970					1975					1980				
aaa	gac	gag	cac	cgc	aaa	ggc	cta	ctc	cac	atg	aaa	atg	gcg	gaa	5994
Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu	
	1985					1990					1995				
ggc	gct	aag	ctg	cag	atg	tgt	tac	tta	ctg	caa	cat	ctc	aac	gac	6039
Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp	
	2000					2005					2010				
ata	cag	ctg	cgg	cac	agg	gtc	gaa	gct	atc	att	gcg	ttt	gcg	cat	6084
Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	Ala	His	
	2015					2020					2025				
gac	ttc	gtc	ggc	gat	cta	cag	act	gat	cag	ctc	aga	cgt	tac	acg	6129
Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr	
	2030					2035					2040				
gaa	atc	aag	cag	tcg	gac	ttg	ccg	agc	gcg	gtt	gcc	gct	aaa	aag	6174
Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	
	2045					2050					2055				
acg	agg	gag	ttc	cgt	tgt	ccg	cct	aga	gaa	cag	atg	aac	gct	ata	6219
Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	
	2060					2065					2070				
ctg	agt	ttc	aag	cac	tta	gag	gag	gaa	gac	aag	gag	aac	tgt	ccg	6264
Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro	
	2075					2080					2085				
tgc	ggc	gag	gag	ctg	atc	gcg	cgc	atg	aac	gag	ttc	cac	gac	acc	6309
Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr	
	2090					2095					2100				
ctc	atg	gcg	cac	gtc	tcg	ctg	cac	gcg	ctg	cag	gag	cct	gat	gct	6354
Leu	Met	Ala	His	Val	Ser	Leu	His	Ala	Leu	Gln	Glu	Pro	Asp	Ala	
	2105					2110					2115				
gcg	gaa	aac	caa	gaa	cca	gaa	gca	aaa	ccg	ggc	gca	ttc	ggc	aag	6399
Ala	Glu	Asn	Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys	
	2120					2125					2130				
tta	tac	aac	att	atc	aat	acg	gta	aag	gaa	ttg	gaa	gaa	gaa	gct	6444
Leu	Tyr	Asn	Ile	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Glu	Ala	
	2135					2140					2145				
aag	gca	att	gaa	gag	cct	ccg	aag	aag	acg	cct	gag	gag	aag	ttc	6489
Lys	Ala	Ile	Glu	Glu	Pro	Pro	Lys	Lys	Thr	Pro	Glu	Glu	Lys	Phe	
	2150					2155					2160				
cgt	aag	gtc	ctc	atc	cag	acc	atc	gtg	aac	tgg	gct	gag	gag	tcg	6534
Arg	Lys	Val	Leu	Ile	Gln	Thr	Ile	Val	Asn	Trp	Ala	Glu	Glu	Ser	
	2165					2170					2175				
cag	ata	gaa	aca	ccc	aaa	ctc	gtc	aga	gaa	atg	ttc	agt	ctt	cta	6579
Gln	Ile	Glu	Thr	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	
	2180					2185					2190				
gtc	cgc	cag	tac	gac	gca	gta	ggc	gaa	cta	atc	cgc	gct	cta	gag	6624

Val	Arg	Gln	Tyr	Asp	Ala	Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu		
	2195					2200					2205					
aag	aca	tac	gtc	atc	aac	gcg	aag	acc	aag	tta	gat	gtc	gcg	gag	6669	
Lys	Thr	Tyr	Val	Ile	Asn	Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Glu		
	2210					2215					2220					
atg	tgg	gtg	ggg	ctc	agc	cag	atc	cga	gcc	ctc	ctg	cca	gtg	cag	6714	
Met	Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln		
	2225					2230					2235					
atg	agc	cag	gag	gaa	gag	gaa	ctc	atg	agg	aag	agg	ctc	tgg	aaa	6759	
Met	Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys		
	2240					2245					2250					
ctt	gtg	aac	aac	cac	aca	ttc	ttc	cag	cat	cca	gac	ttg	atc	agg	6804	
Leu	Val	Asn	Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg		
	2255					2260					2265					
gtg	ctc	cgc	gtg	cac	gag	aac	gtg	atg	gcg	gtg	atg	atg	aac	acg	6849	
Val	Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr		
	2270					2275					2280					
ctc	ggc	cgc	cgc	gcg	cag	gcg	cag	tcc	gac	gca	cag	ccc	tcc	tcg	6894	
Leu	Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Gln	Pro	Ser	Ser		
	2285					2290					2295					
cag	cct	gtc	gca	gag	gac	agc	aag	gag	aag	gac	aca	tca	cac	gag	6939	
Gln	Pro	Val	Ala	Glu	Asp	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu		
	2300					2305					2310					
atg	gtg	gta	gct	tgc	tgc	cgt	ttt	ctc	tgc	tac	ttc	tgc	cgc	acc	6984	
Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr		
	2315					2320					2325					
ggg	aga	cag	aac	cag	aag	gct	atg	ttc	gac	cac	ttc	gac	ttc	ctc	7029	
Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu		
	2330					2335					2340					
ctg	gag	aac	tcc	aac	atc	ctg	ctg	tcc	aga	ccc	tcg	ctg	aga	gga	7074	
Leu	Glu	Asn	Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly		
	2345					2350					2355					
tcc	acg	cct	cta	gac	gtg	gct	tac	tcc	agt	ctt	atg	gag	aac	act	7119	
Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr		
	2360					2365					2370					
gaa	ctg	gcg	ctg	gct	ttg	aga	gag	cac	tac	ctg	gag	aag	ata	gca	7164	
Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala		
	2375					2380					2385					
gta	tac	ctg	tcc	cgt	tgt	ggt	ctg	cag	agc	aac	tcg	gag	ctg	gtg	7209	
Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val		
	2390					2395					2400					
gag	aag	ggg	tac	cct	gac	ctc	ggc	tgg	gat	ccg	gtc	gag	ggg	gag	7254	
Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu		
	2405					2410					2415					
cgg	tat	ctt	gac	ttc	ctg	agg	ttc	tgt	gtt	tgg	gta	aac	ggc	gaa	7299	

Arg Tyr	Leu Asp Phe Leu	Arg Phe Cys Val Trp Val	Asn Gly Glu	
2420		2425	2430	
agc gta	gaa gaa aac gcg aac	cta gtg atc cgt ctc	ctg atc cgt	7344
Ser Val	Glu Glu Asn Ala Asn	Leu Val Ile Arg Leu	Leu Ile Arg	
2435		2440	2445	
cgt ccg	gag tgc ctc ggg ccg	gcg ctg cgc ggc gag	ggc gag ggc	7389
Arg Pro	Glu Cys Leu Gly Pro	Ala Leu Arg Gly Glu	Gly Glu Gly	
2450		2455	2460	
ctg ctg	aag gcc atc gtc gac	gcc aac aag atg agc	gag agg atc	7434
Leu Leu	Lys Ala Ile Val Asp	Ala Asn Lys Met Ser	Glu Arg Ile	
2465		2470	2475	
gcc gac	agg agg aag ctc agg	gaa atg gag cag gag	gga gat gtt	7479
Ala Asp	Arg Arg Lys Leu Arg	Glu Met Glu Gln Glu	Gly Asp Val	
2480		2485	2490	
aac ttc	agc cac ccc ctc ccg	gag tca gat gag gat	gag gac tac	7524
Asn Phe	Ser His Pro Leu Pro	Glu Ser Asp Glu Asp	Glu Asp Tyr	
2495		2500	2505	
ata gac	acg ggc gcc gcc atc	ttg aac ttc tac tgt	acc ttg gta	7569
Ile Asp	Thr Gly Ala Ala Ile	Leu Asn Phe Tyr Cys	Thr Leu Val	
2510		2515	2520	
gat ttg	ctc gga aga tgt gct	cct gat gcc ggt gtt	att gct ctc	7614
Asp Leu	Leu Gly Arg Cys Ala	Pro Asp Ala Gly Val	Ile Ala Leu	
2525		2530	2535	
ggc aag	aac gag tct ctc cgt	gcc cgc gct atc ctg	cgg tcg ctg	7659
Gly Lys	Asn Glu Ser Leu Arg	Ala Arg Ala Ile Leu	Arg Ser Leu	
2540		2545	2550	
gtg ccg	ctg gag gac ctg cag	gga gtg ctg agc ctg	cgc ttc acg	7704
Val Pro	Leu Glu Asp Leu Gln	Gly Val Leu Ser Leu	Arg Phe Thr	
2555		2560	2565	
ctc aac	aac cct gct gct gga	gag gaa cga ccc aag	tct gat atg	7749
Leu Asn	Asn Pro Ala Ala Gly	Glu Glu Arg Pro Lys	Ser Asp Met	
2570		2575	2580	
cca tcg	ggt ctg atc ccg gga	cac aag cag agc gtg	gga ctg ttc	7794
Pro Ser	Gly Leu Ile Pro Gly	His Lys Gln Ser Val	Gly Leu Phe	
2585		2590	2595	
cta gag	aga gtg tac ggc atc	gaa act cag gag ttg	ttc tac aaa	7839
Leu Glu	Arg Val Tyr Gly Ile	Glu Thr Gln Glu Leu	Phe Tyr Lys	
2600		2605	2610	
ctg ctg	gag gaa gcc ttc ctg	cca gac ctc agg gct	gcc act atg	7884
Leu Leu	Glu Glu Ala Phe Leu	Pro Asp Leu Arg Ala	Ala Thr Met	
2615		2620	2625	
ctg gac	agg aac gac ggc tgc	gag tca gac atg gcg	ctg tcg atg	7929
Leu Asp	Arg Asn Asp Gly Cys	Glu Ser Asp Met Ala	Leu Ser Met	
2630		2635	2640	
aac cgc	tac atc ggc aac tcg	atc ctg ccg ctg ctg	atc aag cac	7974

Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His	
	2645					2650					2655				
gcg	tac	ttc	tac	aac	gaa	gct	gag	aac	tac	gcc	agt	tta	ttg	gat	8019
Ala	Tyr	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp	
	2660					2665					2670				
gcc	acg	cta	cat	act	gtt	tat	agg	tta	tcg	aag	aat	cgc	atg	tta	8064
Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu	
	2675					2680					2685				
acc	aag	ggc	cag	cgt	gaa	gcg	gtg	tca	gac	ttc	ctc	gtg	gcg	ctt	8109
Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu	
	2690					2695					2700				
act	tca	gcg	atg	cag	cct	tcc	atg	ttg	ctc	aag	ctg	ctc	agg	aaa	8154
Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys	
	2705					2710					2715				
ttg	acg	gtc	gac	gtg	tct	aaa	ctg	tcc	gag	tat	acc	act	gtc	gct	8199
Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala	
	2720					2725					2730				
ctt	agg	ctg	ctg	acg	ctg	cac	tac	gag	cgc	tgc	gcg	aag	tac	tac	8244
Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys	Tyr	Tyr	
	2735					2740					2745				
ggc	agc	acg	ggc	gcg	ggg	cag	ggc	gcg	ttc	ggc	gcg	tcg	tcg	gac	8289
Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser	Ser	Asp	
	2750					2755					2760				
gag	gag	aag	cgc	ctc	acc	atg	atg	ctc	ttc	tcc	aac	atc	ttc	gac	8334
Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	Phe	Asp	
	2765					2770					2775				
tcg	ctc	agc	aag	atg	gac	tac	gag	ccc	gag	ctc	ttc	ggg	aag	gcg	8379
Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly	Lys	Ala	
	2780					2785					2790				
ctg	ccc	tgt	ctt	att	gct	ata	gga	tgc	gct	ctg	cct	cct	gac	tac	8424
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	
	2795					2800					2805				
tct	ctc	tca	aag	aac	tat	gat	gac	gag	ttt	tac	ggc	aag	gag	caa	8469
Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys	Glu	Gln	
	2810					2815					2820				
gct	gca	ggc	gac	tta	gac	aat	ccc	caa	tac	gac	cct	cag	ccc	ata	8514
Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln	Pro	Ile	
	2825					2830					2835				
aac	acg	tcc	tca	gta	gca	tta	aac	aat	gat	ctc	aac	acg	atc	gta	8559
Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr	Ile	Val	
	2840					2845					2850				
cag	aag	ttc	tcg	gaa	cat	tac	cac	gat	gcg	tgg	gct	agt	agg	aag	8604
Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys	
	2855					2860					2865				
att	gag	aac	ggc	tgg	gtg	tat	gga	gag	ggc	tgg	tct	gat	agc	cag	8649

Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp	Ser	Gln	
2870						2875					2880				
aag	acg	cat	cct	agg	ctg	aag	cct	tat	aat	atg	ctt	aat	gat	tat	8694
Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr	
2885						2890					2895				
gaa	aaa	gag	cgt	tac	aag	gag	cca	gta	cgt	gaa	tct	ctg	aag	gca	8739
Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	
2900						2905					2910				
ctt	cta	gcc	atc	ggg	tgg	tct	gtg	gaa	cat	tca	gaa	gta	gac	ata	8784
Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile	
2915						2920					2925				
ccg	agt	aac	aac	cga	agc	tcc	atg	agg	agg	cag	tcc	aag	tcg	gga	8829
Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly	
2930						2935					2940				
ggc	cgc	cct	ccc	gaa	att	gtg	aca	gac	tcg	gcg	act	cca	ttc	gac	8874
Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asp	
2945						2950					2955				
tac	aac	cct	cac	cca	gtc	gac	atg	acc	aac	ttg	acg	cta	tcg	agg	8919
Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	
2960						2965					2970				
gag	atg	cag	aac	atg	gcg	gag	agg	ctc	gct	gac	aac	gca	cat	gac	8964
Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp	
2975						2980					2985				
atc	tgg	gcg	aag	aag	aag	aag	gaa	gaa	ctt	gtt	act	aat	gga	ggg	9009
Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly	
2990						2995					3000				
ggc	atc	cac	ccc	caa	cta	gta	ccc	tac	gac	ctc	cta	aca	gac	aaa	9054
Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	
3005						3010					3015				
gaa	aag	aag	aaa	gat	cga	gaa	cgt	tct	cag	gag	ttc	ctc	aaa	tac	9099
Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	
3020						3025					3030				
ctg	cag	tac	caa	ggg	tac	aag	ctc	cac	cgg	ccc	agc	aag	gcg	cca	9144
Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys	Ala	Pro	
3035						3040					3045				
caa	agt	gat	acg	gaa	caa	acc	act	acg	ggg	gta	gca	ata	gag	ttg	9189
Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu	Leu	
3050						3055					3060				
aga	ttt	gcg	tac	tcg	ctc	ctt	gag	aaa	ttg	atc	cag	tac	atc	gat	9234
Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp	
3065						3070					3075				
agg	gcc	acc	att	aat	atg	aag	ctt	ttg	aaa	cct	tcg	act	aca	ttc	9279
Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	
3080						3085					3090				
agt	agg	aga	agt	agt	ttt	aag	act	agt	acc	agg	gat	att	aag	ttc	9324

Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys	Phe	
	3095					3100					3105				
ttt	tct	aag	gcg	gtg	ctg	cct	cta	atg	gag	aag	tat	ttc	tca	acg	9369
Phe	Ser	Lys	Ala	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	
	3110					3115					3120				
cat	cgt	aac	tac	ttc	ata	gca	gta	gct	act	gcg	acc	aat	aat	ggt	9414
His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn	Val	
	3125					3130					3135				
ggt	gca	gcc	agc	ctg	aag	gag	aaa	gag	atg	gta	gcc	gcg	ctg	ttc	9459
Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	Leu	Phe	
	3140					3145					3150				
tgt	aag	ctt	gct	agc	ttg	ctt	aga	tct	aga	ctc	gca	gct	ttc	ggt	9504
Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly	
	3155					3160					3165				
cct	gac	gtc	cgc	atc	aca	gtc	cgc	tgt	ctc	caa	gtg	ttg	gtg	aag	9549
Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	
	3170					3175					3180				
ggc	atc	gac	gcc	aag	tcc	tta	gtg	aag	aac	tgc	ccc	gag	ttc	atc	9594
Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe	Ile	
	3185					3190					3195				
agg	acc	tcc	atg	ttg	acc	ttc	ttc	aac	aat	gtc	gct	gat	gat	gta	9639
Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	Asp	Val	
	3200					3205					3210				
ggg	cat	acc	atc	atg	aat	tta	cag	gat	ggt	aaa	tac	gcg	cac	ctt	9684
Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala	His	Leu	
	3215					3220					3225				
cga	ggt	aca	cat	ttg	aag	acg	tcc	acg	tcc	ctg	ggc	tat	atc	aat	9729
Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Ile	Asn	
	3230					3235					3240				
gga	gta	ctg	ctc	ccc	ata	ctg	acg	gcc	aag	ttc	gac	cat	ctg	gct	9774
Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His	Leu	Ala	
	3245					3250					3255				
aac	tgc	gag	tac	ggt	gct	gat	ctg	ttg	ttg	gac	gag	ata	caa	gtg	9819
Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	
	3260					3265					3270				
gcg	tca	tac	aag	atg	ttg	ggc	tcc	ctg	tac	gcg	ctc	ggc	acg	gac	9864
Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly	Thr	Asp	
	3275					3280					3285				
gct	tcg	ctc	aca	cac	gac	aga	aag	tac	ctc	aag	act	gag	att	gag	9909
Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	
	3290					3295					3300				
aga	cat	aaa	cct	gct	ttg	ggt	tcg	tgt	cta	ggt	gcg	ttc	agt	tcg	9954
Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser	Ser	
	3305					3310					3315				
aca	ttc	cca	gtg	gcg	ttc	ttg	gaa	cct	cac	ctg	aac	aaa	cac	aac	9999

Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	
	3320					3325					3330				
cag	ttc	tcc	ttg	ctg	aac	agg	atc	gct	gac	cat	tct	ttg	gaa	gcc	10044
Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	
	3335					3340					3345				
caa	gac	ata	atg	cag	aaa	atg	gaa	caa	tgc	atg	ccg	acg	cta	gag	10089
Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	Leu	Glu	
	3350					3355					3360				
acg	atc	tta	ggc	gag	gtg	gac	caa	ttc	gtg	gag	tca	gac	aag	acg	10134
Thr	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	
	3365					3370					3375				
tac	aac	gag	gcg	ccg	cat	atc	atc	gat	gtg	gtg	ctg	cct	tta	ctc	10179
Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro	Leu	Leu	
	3380					3385					3390				
tgt	tct	tat	ttg	ccg	ttc	tgg	tgg	gca	cag	ggg	cct	gat	aat	gtt	10224
Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp	Asn	Val	
	3395					3400					3405				
act	cct	act	ggc	gga	aac	cac	gta	aca	atg	gta	aca	gcg	gaa	cac	10269
Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala	Glu	His	
	3410					3415					3420				
atg	aac	cag	ctc	ctc	aag	aat	gtt	ctg	aag	ctc	atc	aaa	aag	aac	10314
Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys	Lys	Asn	
	3425					3430					3435				
atc	ggc	aat	gag	aac	gcg	ccg	tgg	atg	acc	cgc	atc	gcc	acc	tac	10359
Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala	Thr	Tyr	
	3440					3445					3450				
acg	cag	cag	atc	atc	atc	aac	agc	tcc	gag	gaa	ctg	ctg	agg	gat	10404
Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu	Arg	Asp	
	3455					3460					3465				
tcc	ttc	ctg	ccg	ctc	gct	gaa	cgt	gtt	cgc	aaa	cgc	acg	gac	aat	10449
Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr	Asp	Asn	
	3470					3475					3480				
atg	ttc	cat	aag	gag	gag	agc	ttg	agg	ggg	ttt	att	aag	tcg	tca	10494
Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys	Ser	Ser	
	3485					3490					3495				
aca	gac	gac	aca	tcc	cag	gta	gag	tct	cag	ata	caa	gaa	gac	tgg	10539
Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu	Asp	Trp	
	3500					3505					3510				
cag	ctg	ctg	gtc	aga	gac	atc	tac	tcc	ttc	tac	ccg	ctg	ctc	atc	10584
Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	
	3515					3520					3525				
aag	tac	gtc	gac	ctg	cag	agg	aac	cac	tgg	ctc	agg	aac	aat	gtt	10629
Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn	Asn	Val	
	3530					3535					3540				
cca	gag	gcg	gaa	gag	ctg	tac	aac	cac	gtg	gct	gaa	atc	ttc	aac	10674



Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn	
	3545					3550					3555				
atc	tgg	tcg	aag	agc	cag	tac	ttc	ttg	aag	gag	gaa	cag	aac	ttc	10719
Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	
	3560					3565					3570				
atc	tct	gcc	aac	gaa	att	gat	aac	atg	gtg	ctg	att	atg	cca	aca	10764
Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met	Pro	Thr	
	3575					3580					3585				
gca	aca	aga	aga	gtg	aca	gca	gta	aca	gat	ggc	act	cct	caa	ggc	10809
Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro	Gln	Gly	
	3590					3595					3600				
ggc	gga	aag	aaa	aag	aag	aag	cac	cgt	gat	aag	aaa	cgc	gac	aaa	10854
Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg	Asp	Lys	
	3605					3610					3615				
gac	aag	gaa	gtc	caa	gag	tcc	cta	atg	gta	gct	tgt	ctg	aag	agg	10899
Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	
	3620					3625					3630				
ttg	tta	cca	gtt	ggc	ctt	aac	cta	ttc	gct	ggc	aga	gaa	caa	gaa	10944
Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	
	3635					3640					3645				
ctg	gtg	cag	cat	tgt	aaa	gac	agg	ttc	ctg	aag	aaa	atg	tca	gaa	10989
Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Lys	Met	Ser	Glu	
	3650					3655					3660				
caa	gat	gtg	gca	gaa	ttc	gag	aag	acc	cag	ctg	aca	ctt	cca	gat	11034
Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	Pro	Asp	
	3665					3670					3675				
aaa	ata	gat	ccg	gca	gac	gaa	atg	tct	tgg	caa	cat	tac	ttg	tat	11079
Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	
	3680					3685					3690				
agc	aag	tta	ggc	tcg	aag	agt	aag	agc	aat	ata	act	gtg	gaa	act	11124
Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	Glu	Thr	
	3695					3700					3705				
gct	gaa	aat	aag	gcc	aag	att	att	gat	gat	acc	gtc	gag	aga	atc	11169
Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu	Arg	Ile	
	3710					3715					3720				
gtc	gct	atg	agt	aaa	gtg	ctt	ttc	gga	ttg	cat	atg	atc	gac	cat	11214
Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His	
	3725					3730					3735				
ccc	caa	caa	atg	agt	aag	aac	gtg	tac	cgg	tcg	gtg	gtg	tcg	ata	11259
Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser	Ile	
	3740					3745					3750				
caa	cgc	aag	cgc	gcc	gtc	atc	gcc	tgc	ttc	cga	caa	act	tca	cta	11304
Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser	Leu	
	3755					3760					3765				
cat	tct	ctg	ccg	aga	cat	cga	gag	tgt	aac	atc	ttc	gct	cgc	acg	11349

His 3770	Ser	Leu	Pro	Arg	His	Arg 3775	Ala	Cys	Asn	Ile	Phe 3780	Ala	Arg	Thr	
tac Tyr 3785	tac Tyr	gag Glu	ctc Leu	tgg Trp	ttg Leu	gaa Glu 3790	gag Glu	gag Glu	aac Asn	att Ile	gga Gly 3795	caa Gln	gaa Glu	gta Val	11394
atg Met 3800	ata Ile	gaa Glu	gat Asp	ctt Leu	act Thr	caa Gln 3805	tca Ser	ttc Phe	gaa Glu	gac Asp	gca Ala 3810	gag Glu	ctg Leu	aag Lys	11439
aag Lys 3815	agt Ser	gac Asp	gtg Val	gtg Val	gag Glu	gaa Glu 3820	ggg Gly	gag Glu	aag Lys	cct Pro	gac Asp 3825	ccc Pro	ctc Leu	acg Thr	11484
cag Gln 3830	ctg Leu	gtc Val	acc Thr	acc Thr	ttc Phe	tgt Cys 3835	cgc Arg	ggg Gly	gcc Ala	atg Met	act Thr 3840	gag Glu	agg Arg	tcc Ser	11529
ggc Gly 3845	gct Ala	ttg Leu	cag Gln	gag Glu	gat Asp	cct Pro 3850	cta Leu	tac Tyr	atg Met	tct Ser	tac Tyr 3855	gca Ala	cac His	atc Ile	11574
ata Ile 3860	gcg Ala	aag Lys	tcc Ser	tgt Cys	gga Gly	gaa Glu 3865	gaa Glu	gag Glu	gaa Glu	gaa Glu	ggg Gly 3870	ggg Gly	ggg Gly	gag Glu	11619
gaa Glu 3875	gag Glu	gaa Glu	ggg Gly	ggg Gly	gga Gly	gaa Glu 3880	gca Ala	gag Glu	gct Ala	gaa Glu	gac Asp 3885	gaa Glu	ggc Gly	aga Arg	11664
gcc Ala 3890	agt Ser	ata Ile	cac His	gaa Glu	caa Gln	gaa Glu 3895	atg Met	gag Glu	aaa Lys	caa Gln	aag Lys 3900	ctc Leu	cta Leu	ttc Phe	11709
cac His 3905	caa Gln	gcg Ala	cgg Arg	ctg Leu	gcg Ala	gac Asp 3910	cgt Arg	ggg Gly	gtt Val	gcc Ala	gaa Glu 3915	atg Met	gtg Val	ttg Leu	11754
ctg Leu 3920	cac His	atc Ile	tcc Ser	gcg Ala	tcc Ser	aaa Lys 3925	ggc Gly	ctg Leu	ccc Pro	agc Ser	gag Glu 3930	atg Met	gtc Val	atg Met	11799
aag Lys 3935	act Thr	tta Leu	cag Gln	ctc Leu	ggg Gly	att Ile 3940	agt Ser	ata Ile	ctg Leu	agg Arg	ggc Gly 3945	ggc Gly	aat Asn	att Ile	11844
gat Asp 3950	ata Ile	cag Gln	atg Met	ggg Gly	atg Met	ttg Leu 3955	aac Asn	cac His	ttg Leu	aaa Lys	gac Asp 3960	aag Lys	aaa Lys	gac Asp	11889
gtg Val 3965	ggc Gly	ttc Phe	ttt Phe	acg Thr	tcc Ser	atc Ile 3970	gcc Ala	ggc Gly	ctc Leu	atg Met	aac Asn 3975	tcc Ser	tgc Cys	tcc Ser	11934
gtg Val 3980	ctc Leu	gat Asp	ctt Leu	gac Asp	gcc Ala	ttc Phe 3985	gag Glu	agg Arg	aac Asn	acc Thr	aag Lys 3990	gct Ala	gaa Glu	ggg Gly	11979
ctg 3990	ggc	gtg	ggg	ctg	gaa	ggg	gcg	gcg	gga	gag	aag	aac	atg	cat	12024

Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	
	3995					4000					4005				
gac	gcc	gag	ttc	acc	tgc	gca	ctc	ttc	agg	ttc	att	cag	ctc	acc	12069
Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	
	4010					4015					4020				
tgt	gaa	gga	cac	aac	ttg	gac	tgg	cag	aac	tac	ctg	cga	act	cag	12114
Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	
	4025					4030					4035				
gcc	ggt	aac	acg	aca	aca	gtg	aac	gtg	gtc	atc	tgc	acc	gtc	gac	12159
Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	
	4040					4045					4050				
tac	ctg	ctg	cgg	ctg	cag	gag	tcc	atc	atg	gac	ttc	tac	tgg	cac	12204
Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	
	4055					4060					4065				
tac	tca	agc	aag	gaa	ctg	atc	gac	ccg	gcc	ggc	aaa	gcg	aac	ttc	12249
Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	
	4070					4075					4080				
ttc	aag	gcc	att	ggc	gtg	gct	tcc	caa	gta	ttc	aac	acc	ctc	act	12294
Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	
	4085					4090					4095				
gaa	gtc	ata	cag	gga	cct	tgt	acg	cag	aat	cag	cag	gct	ttg	gct	12339
Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala	
	4100					4105					4110				
cac	tcc	agg	ttg	tgg	gac	gct	gtc	ggg	ggg	ttc	ctg	ttc	cta	ttc	12384
His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	
	4115					4120					4125				
tcc	cac	atg	cag	gac	aag	ttg	tcg	aag	cac	tcg	tcg	cag	gtg	gac	12429
Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	
	4130					4135					4140				
ctg	ctg	aag	gaa	ctc	ctc	aat	ctg	cag	aag	gac	atg	atc	ccc	atg	12474
Leu	Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Pro	Met	
	4145					4150					4155				
atg	ctg	tcc	atg	ctt	gaa	gga	aat	gtt	gtt	aat	ggg	aca	atc	ggc	12519
Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	
	4160					4165					4170				
aag	caa	atg	gtg	gac	aca	cta	gta	gaa	tcg	gcc	tcc	aac	gtg	gaa	12564
Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	
	4175					4180					4185				
ctg	atc	ctg	aaa	tac	ttc	gac	atg	ttc	ctc	aag	ctg	aag	gac	ctg	12609
Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	
	4190					4195					4200				
acc	tcc	agc	gcc	agc	ttc	cag	gag	att	gat	gcc	aat	aac	gac	ggc	12654
Thr	Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	Asp	Gly	
	4205					4210					4215				
tgg	gtg	ctg	ccc	aag	gac	ttc	aag	gag	aaa	atg	gaa	caa	cag	aag	12699

Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	
	4220					4225					4230				
agt	tat	act	ccc	gaa	gaa	atc	gag	ttc	ctc	cta	gct	tgc	tgc	gag	12744
Ser	Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	Cys	Glu	
	4235					4240					4245				
acg	aac	cac	gac	ggc	aag	tta	gac	tac	atc	ggc	ttc	tgc	gac	cgt	12789
Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	Asp	Arg	
	4250					4255					4260				
ttc	cac	gag	cct	gcc	aag	gag	atc	ggg	ttt	aac	ttg	gcc	gtg	tta	12834
Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	
	4265					4270					4275				
ctg	act	aac	ttg	tct	gaa	cat	atg	ccg	aac	gag	cct	aga	ttg	gca	12879
Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	
	4280					4285					4290				
cgt	ttc	ctg	gag	acg	gca	ggc	tca	gtc	ctg	aac	tac	ttc	gaa	cca	12924
Arg	Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	
	4295					4300					4305				
ttc	ctg	ggc	cgt	atc	gag	atc	atg	ggc	ggc	tcc	aag	cgc	atc	gag	12969
Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	Ile	Glu	
	4310					4315					4320				
cgt	gtc	tac	ttc	gag	atc	aag	gag	tct	aat	ata	gaa	cag	tgg	gag	13014
Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Glu	
	4325					4330					4335				
aaa	ccg	caa	att	aag	gaa	tcc	aaa	cgc	gcg	ttc	ttc	tac	agc	ata	13059
Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	
	4340					4345					4350				
gta	aca	gaa	ggc	ggc	gat	aaa	gaa	aaa	ttg	gag	gct	ttc	gtg	aac	13104
Val	Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	
	4355					4360					4365				
ttc	tgt	gag	gac	gcc	atc	ttt	gaa	atg	acg	cac	gcg	tcg	gga	ctg	13149
Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	
	4370					4375					4380				
atg	gcc	gcg	tcc	gaa	gag	tcg	gtg	gga	ggg	acc	aag	aat	aga	gag	13194
Met	Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn	Arg	Glu	
	4385					4390					4395				
gcc	agc	tat	atg	tat	atg	ggg	gat	gat	gat	gat	gag	aga	gcc	ggc	13239
Ala	Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Asp	Asp	Glu	Arg	Ala	Gly	
	4400					4405					4410				
aaa	gat	cca	ttc	cgt	cgc	gga	ctc	cag	tca	gtc	aaa	gac	ggc	gtc	13284
Lys	Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln	Ser	Val	Lys	Asp	Gly	Val	
	4415					4420					4425				
gcc	acg	gca	ttt	tca	tcc	tta	tct	cct	tcc	aac	ata	aag	gcg	aaa	13329
Ala	Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro	Ser	Asn	Ile	Lys	Ala	Lys	
	4430					4435					4440				
atc	gca	gac	atg	cag	caa	atg	cca	cca	gcc	gaa	cta	gct	gtg	ggc	13374

Ile	Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala	Val	Gly		
	4445					4450					4455					
ttc	ttc	aaa	atg	ttc	ttc	tat	cta	ttc	tat	tac	ttg	ggc	tat	gga	13419	
Phe	Phe	Lys	Met	Phe	Phe	Tyr	Leu	Phe	Tyr	Tyr	Leu	Gly	Tyr	Gly		
	4460					4465					4470					
gtt	ctc	gtc	gtt	gtc	agg	tat	ata	ttc	ggg	gtg	ctc	ttg	ggg	ctg	13464	
Val	Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu	Gly	Leu		
	4475					4480					4485					
atg	cga	ggg	cct	cag	acg	gat	gaa	ccg	cct	ccg	gag	ccg	acg	gaa	13509	
Met	Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro	Pro	Pro	Glu	Pro	Thr	Glu		
	4490					4495					4500					
gag	gag	aaa	atc	ggg	cag	ttg	aga	cac	agg	ttg	cta	gag	aca	caa	13554	
Glu	Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala	Thr	Gln		
	4505					4510					4515					
agt	tct	cga	cat	ctc	ccg	gag	ttg	cct	cca	gct	gat	gat	acg	gga	13599	
Ser	Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp	Thr	Gly		
	4520					4525					4530					
cag	atg	caa	gtg	tcg	gca	ttc	gga	ctc	gat	atc	acc	aaa	gaa	gac	13644	
Gln	Met	Gln	Val	Ser	Ala	Phe	Gly	Leu	Asp	Ile	Thr	Lys	Glu	Asp		
	4535					4540					4545					
aat	gga	cag	ata	caa	gta	aaa	cct	cac	gaa	tca	ccc	agc	aca	tcc	13689	
Asn	Gly	Gln	Ile	Gln	Val	Lys	Pro	His	Glu	Ser	Pro	Ser	Thr	Ser		
	4550					4555					4560					
act	cca	tca	tca	ggc	gag	gag	gag	gag	gtg	tca	ccc	gac	gag	agc	13734	
Thr	Pro	Ser	Ser	Gly	Glu	Glu	Ala	Glu	Val	Ser	Pro	Asp	Glu	Ser		
	4565					4570					4575					
gcc	gac	cac	acg	gag	gag	cag	aga	ccg	cct	tct	ctt	atc	gac	ctg	13779	
Ala	Asp	His	Thr	Glu	Glu	Gln	Arg	Pro	Pro	Ser	Leu	Ile	Asp	Leu		
	4580					4585					4590					
ctt	ggg	ggg	gaa	caa	gct	aaa	aag	caa	gct	cag	gag	agg	atg	gaa	13824	
Leu	Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln	Ala	Gln	Glu	Arg	Met	Glu		
	4595					4600					4605					
gct	caa	gct	gct	caa	caa	gct	gcc	atg	tcg	gcc	att	gaa	gct	gaa	13869	
Ala	Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu	Ala	Glu		
	4610					4615					4620					
agc	aaa	aag	gca	gtg	caa	ggg	ccc	gca	cca	tca	gag	cta	tct	caa	13914	
Ser	Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu	Ser	Gln		
	4625					4630					4635					
gtg	gac	ctg	tcc	cag	tac	acc	cgg	cgc	gca	gtc	tcg	ttc	cta	gct	13959	
Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe	Leu	Ala		
	4640					4645					4650					
cgc	aac	ttc	tac	aac	ctg	aag	tac	gtg	gag	ctc	gtg	ctg	gcc	ttc	14004	
Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe		
	4655					4660					4665					
tgt	atc	aac	ttc	gtg	ctg	ctc	ttc	tat	aag	gta	tct	acc	ctg	gat	14049	

Cys	Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr	Leu	Asp	
4670						4675					4680				
ggg	gaa	ggg	ggg	gaa	ggg	tca	ggg	ctg	ggg	gac	atc	atc	gcc	ggg	14094
Gly	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile	Ala	Gly	
4685						4690					4695				
ggg	ggg	tcc	gga	tcc	ggg	gct	ggc	tct	ggc	agt	gga	gac	ggg	agc	14139
Gly	Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp	Gly	Ser	
4700						4705					4710				
ggc	gag	tca	ggg	gaa	gat	gac	gac	gcg	tta	gaa	gta	gta	cac	ata	14184
Gly	Glu	Ser	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val	His	Ile	
4715						4720					4725				
gac	gaa	gac	ttc	ttc	tat	atg	gaa	cac	gtc	atc	aag	atg	gcg	gcc	14229
Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met	Ala	Ala	
4730						4735					4740				
gtg	ctg	cac	tct	atc	gtg	tct	ctg	gct	ata	ctc	atc	gga	tat	tat	14274
Val	Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly	Tyr	Tyr	
4745						4750					4755				
cat	ctt	aag	gtg	ccg	cta	gcc	atc	ttc	aaa	cgt	gag	aag	gag	atc	14319
His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	
4760						4765					4770				
gct	cgt	aag	ctg	gaa	ttc	gac	ggg	ctg	tac	atc	gct	gaa	cag	cct	14364
Ala	Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	Gln	Pro	
4775						4780					4785				
gaa	gac	gac	gac	ctc	aag	agc	cac	tgg	gac	aag	ctc	gtt	ata	tct	14409
Glu	Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	
4790						4795					4800				
gcc	aaa	tca	ttc	ccc	gta	aac	tac	tgg	gac	aag	ttt	gtg	aag	aag	14454
Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	
4805						4810					4815				
aag	gtt	cgc	gcc	aaa	tac	tcg	gag	aca	tat	gac	ttc	gac	tcc	atc	14499
Lys	Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	
4820						4825					4830				
tcc	aac	atg	ttg	ggc	atg	gag	aag	act	tcc	ttc	tcc	gcg	caa	gaa	14544
Ser	Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala	Gln	Glu	
4835						4840					4845				
gaa	gaa	ggc	agc	aaa	gga	ctt	att	cat	tac	ata	atc	aac	ata	gac	14589
Glu	Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn	Ile	Asp	
4850						4855					4860				
tgg	cgc	tac	caa	gtg	tgg	aag	gcc	ggc	gtg	acg	atc	aca	gac	aac	14634
Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	Asp	Asn	
4865						4870					4875				
tcg	ttc	ctc	tac	tcg	cta	tgg	tac	ttc	tcc	ttc	tcc	gtg	atg	ggg	14679
Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	
4880						4885					4890				
aac	ttc	aac	aac	ttc	ttc	ttc	gcg	gca	cat	ttg	ttg	gac	gtg	gct	14724

Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	
4895						4900					4905				
gtt	ggg	ttt	aag	acc	ctg	agg	act	atc	ttg	cag	tct	gtc	acg	cat	14769
Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His	
4910						4915					4920				
aat	gga	aaa	cag	ctg	gta	tta	acg	gtg	atg	ctg	ctg	act	ata	atc	14814
Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	
4925						4930					4935				
gtg	tac	atc	tac	acg	gtg	atc	gcg	ttc	aac	ttc	ttc	cgc	aag	ttc	14859
Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	
4940						4945					4950				
tac	gtg	cag	gag	gag	gac	gac	gaa	gtc	aat	agg	aac	tgc	cat	gac	14904
Tyr	Val	Gln	Glu	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys	His	Asp	
4955						4960					4965				
atg	ttg	acg	tgc	ttc	gtg	ttc	aac	ttg	tac	aag	ggg	gtg	cgg	gcg	14949
Met	Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val	Arg	Ala	
4970						4975					4980				
ggc	ggc	ggc	atc	ggc	gac	gag	ctg	gag	ccg	cct	gat	gga	gac	gac	14994
Gly	Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu	Pro	Pro	Asp	Gly	Asp	Asp	
4985						4990					4995				
tcc	gag	gtc	tac	cgc	atc	atc	ttc	gac	atc	tcc	ttc	ttc	ttc	ttc	15039
Ser	Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp	Ile	Ser	Phe	Phe	Phe	Phe	
5000						5005					5010				
atc	atc	gtt	atc	ctg	ctc	gct	atc	ctg	cag	ggg	ttg	atc	atc	gac	15084
Ile	Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu	Gln	Gly	Leu	Ile	Ile	Asp	
5015						5020					5025				
gcg	ttc	gga	gag	ctg	cgt	gac	cag	ttg	gag	tcg	gtc	aag	gag	gac	15129
Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	Glu	Asp	
5030						5035					5040				
atg	gag	tcc	aac	tgc	ttc	atc	tgc	ggc	atc	aat	aaa	gac	tat	ttt	15174
Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Asn	Lys	Asp	Tyr	Phe	
5045						5050					5055				
gat	aaa	gtg	ccg	cac	ggg	ttc	gac	aca	cac	gtg	caa	agg	gaa	cac	15219
Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Arg	Glu	His	
5060						5065					5070				
aat	tta	gct	aat	tac	atg	ttc	ttc	ctc	atg	cat	ctc	att	aat	aaa	15264
Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys	
5075						5080					5085				
ccc	gat	acg	gag	tat	aca	ggg	caa	gaa	acc	tac	gta	tgg	aac	atg	15309
Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	
5090						5095					5100				
tac	aca	caa	aga	tgt	tgg	gac	ttt	ttc	ccc	gtg	gga	gat	tgt	ttc	15354
Tyr	Thr	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	
5105						5110					5115				
cga	aag	caa	tac	gaa	gac	ctc	atg	gga	gaa	tag					15387

Arg Lys Gln Tyr Glu Asp Leu Met Gly Glu  
 5120 5125

<210> 128  
 <211> 5128  
 <212> PRT  
 <213> *Heliothis virescens*

<220>  
 <223> pXL-Hv7

<400> 128  
 Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe  
 1 5 10 15  
 Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
 20 25 30  
 Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
 35 40 45  
 Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
 50 55 60  
 Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
 65 70 75 80  
 Thr Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg  
 85 90 95  
 Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Leu Asn Ser Asp  
 100 105 110  
 Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Gln Asp Lys Leu Ala  
 115 120 125  
 Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly Glu Ala Cys Trp Trp  
 130 135 140  
 Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
 145 150 155 160  
 Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu  
 165 170 175  
 His Thr Thr Lys Glu Asn Glu Val Ser Ile Val Asn Ala Ser Phe His  
 180 185 190  
 Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met  
 195 200 205  
 Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His  
 210 215 220  
 Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Thr Lys Asp Gly  
 225 230 235 240  
 Gly Gln Asn Ile Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala  
 245 250 255



Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Ala	Gly	Gly	
			260					265						270		
Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	
		275					280					285				
Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu	Tyr	Leu	Val	Ser	Arg	
	290					295					300					
Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys	Leu	Arg	Gln	Glu	Lys	
305					310					315					320	
Asp	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	
				325					330					335		
Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	Ile	Val	Gln	His	Ser	
			340					345					350			
Glu	Thr	Gly	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	
		355					360					365				
Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	
	370					375					380					
Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	
385					390					395					400	
Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Lys	Phe	
				405					410					415		
Ile	Asn	Gly	Leu	Glu	Thr	Leu	Gln	Glu	Asn	Arg	Arg	His	Ser	Met	Phe	
			420					425					430			
Phe	Ala	Ser	Val	Asn	Leu	Gly	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	
		435					440					445				
Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Asp	Glu	Asp	Met	Glu	His	Glu	Glu	Lys	
	450					455					460					
Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	
465					470					475					480	
Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Val	
				485					490					495		
Ile	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu	Ala	Gly	Asp	Glu	Ser	
			500					505					510			
Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	
		515					520					525				
Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	
						535					540					
Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Gly	
545					550					555					560	
Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	
				565					570					575		

Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile  
 580 585 590  
 Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu  
 595 600 605  
 Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn  
 610 615 620  
 Asn Ile Cys Asp Tyr Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr  
 625 630 635 640  
 Ala Leu Val Asp His Val Ser Ser Val Arg Pro Asn Ile Phe Val Gly  
 645 650 655  
 Arg Val Glu Gly Ser Ala Val Tyr Arg Lys Trp Tyr Phe Glu Val Thr  
 660 665 670  
 Met Asp His Ile Glu Lys Thr Thr His Met Met Pro His Leu Arg Ile  
 675 680 685  
 Gly Trp Ala Asn Thr Thr Gly Tyr Val Pro Tyr Pro Gly Gly Gly Glu  
 690 695 700  
 Lys Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Tyr Gly Phe  
 705 710 715 720  
 Asp Gly Ala Tyr Leu Trp Ser Gly Gly Arg Lys Thr Pro Val Asn Arg  
 725 730 735  
 Thr His Ala Glu Glu Pro Tyr Ile Arg Lys Gly Asp Val Ile Gly Cys  
 740 745 750  
 Ala Leu Asp Leu Thr Val Pro Ile Ile Asn Phe Met Phe Asn Gly Val  
 755 760 765  
 Arg Val Thr Gly Ser Phe Thr Asn Phe Asn Leu Glu Gly Met Phe Phe  
 770 775 780  
 Pro Val Ile Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Leu Gly  
 785 790 795 800  
 Gly Glu His Gly Arg Leu Arg Tyr Ala Ala Pro Glu Gly Tyr Ser Pro  
 805 810 815  
 Leu Val Glu Ser Leu Leu Pro Gln Gln Ile Leu Ser Leu Glu Pro Cys  
 820 825 830  
 Phe Tyr Phe Gly Asn Leu Ser Lys Arg Ala Leu Ala Gly Pro Pro Leu  
 835 840 845  
 Val Gln Asp Asp Thr Ala Phe Val Pro Thr Pro Val Asp Thr Leu Gln  
 850 855 860  
 Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg Asp Lys Leu Ala Glu  
 865 870 875 880  
 Asn Ile His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Met  
 885 890 895

Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile His Pro Cys Leu Val  
 900 905 910  
 Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ile Gln Leu  
 915 920 925  
 Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu Gly Tyr Tyr Ile Ser  
 930 935 940  
 Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val Arg Leu Pro Asn Glu  
 945 950 955 960  
 Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser  
 965 970 975  
 Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu Val Asp Gln Leu Ala  
 980 985 990  
 Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp  
 995 1000 1005  
 Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met His Arg Ser Pro His  
 1010 1015 1020  
 Leu Val Pro Tyr Pro Lys Val Asp Asp Ala Ile Lys Lys Ala Asn  
 1025 1030 1035  
 Arg Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly  
 1040 1045 1050  
 Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln His Glu Ala Leu Leu  
 1055 1060 1065  
 Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp Phe Arg Thr Tyr Arg  
 1070 1075 1080  
 Ala Glu Lys Asn Tyr Ala Val Ser Ser Gly Lys Trp Tyr Phe Glu  
 1085 1090 1095  
 Phe Glu Ile Leu Thr Ala Gly Pro Met Arg Val Gly Trp Ala His  
 1100 1105 1110  
 Ala Asp Met Ala Pro Gly Met Met Leu Gly Gln Asp Glu Asn Ser  
 1115 1120 1125  
 Trp Ala Phe Asp Gly Tyr Asn Glu Glu Lys Val Tyr Ser Gly Asn  
 1130 1135 1140  
 Thr Glu Ser Phe Gly Lys Gln Trp Ala Val Gly Asp Val Val Gly  
 1145 1150 1155  
 Val Phe Leu Asp Leu Ile Asp Lys Thr Ile Ser Phe Ser Leu Asn  
 1160 1165 1170  
 Gly Glu Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala  
 1175 1180 1185  
 Asp Val Gln Gly Asp Asn Phe Val Pro Ala Cys Thr Leu Gly Val  
 1190 1195 1200

Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	Asp	Val	Asn	Thr	Leu
1205						1210					1215			
Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met	Ile	Asp	Thr	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Asn	Glu	Phe
1295						1300					1305			
Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp	Val	Glu	Ile	Lys	Asp
1310						1315					1320			
Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	Glu	Ala	Gln	Met	Pro
1325						1330					1335			
Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly	Phe	Thr	Met	Asn	Asp
1340						1345					1350			
Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln	Glu	Glu	Leu	Pro	Ser
1355						1360					1365			
Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser
1370						1375					1380			
Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr	Asn	Asn	Leu	Gln	Pro
1385						1390					1395			
Gly	Gln	Val	Asn	Gly	Met	His	Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met
1400						1405					1410			
Ala	Lys	Tyr	Asp	Leu	Gly	Ala	Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys
1415						1420					1425			
Lys	Asp	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys
1430						1435					1440			
Arg	Gly	Glu	Ser	Ser	Asp	Arg	Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr
1445						1450					1455			
Pro	Asp	Pro	Phe	Ser	Asp	Thr	Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala
1460						1465					1470			
Arg	Arg	Pro	Asn	Pro	Gln	Ile	Lys	Val	Ser	Gln	Ala	Asn	Gln	Arg
1475						1480					1485			
Tyr	Asn	Gly	Met	Asn	Ala	Arg	Pro	Ser	Arg	Thr	Asn	Leu	Tyr	Gly
1490						1495					1500			

Ser	Gln	Val	Gly	Leu	Asn	Met	Ala	Thr	Pro	Thr	Gln	Asp	Arg	Lys
1505						1510					1515			
Gln	Met	Thr	Thr	Ser	Thr	Leu	Ala	Gln	Ser	Ala	Thr	Glu	Thr	Val
1520						1525					1530			
Gly	Asn	Glu	Ile	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu
1535						1540					1545			
Tyr	Phe	Tyr	Gly	Val	Arg	Ile	Tyr	Pro	Gly	Gln	Asp	Pro	Thr	His
1550						1555					1560			
Val	Tyr	Ile	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Lys
1565						1570					1575			
Asp	Phe	Asn	Gln	Ser	Lys	Val	Thr	Lys	Ser	Ser	Val	Ile	Ile	Thr
1580						1585					1590			
Asp	Asp	Tyr	Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys
1595						1600					1605			
Tyr	Met	Val	Arg	Ala	Asp	Glu	Leu	Tyr	Asn	Glu	Val	Met	Ala	Glu
1610						1615					1620			
Ala	Thr	Ala	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Ser
1625						1630					1635			
Val	Asp	Thr	Ser	Thr	Gly	Ser	Val	Ser	Phe	Thr	Cys	Glu	Gly	Lys
1640						1645					1650			
Asp	Thr	Ser	Phe	Lys	Phe	Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe
1655						1660					1665			
Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile
1670						1675					1680			
Glu	Leu	Gly	Arg	Ser	Ala	Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val
1685						1690					1695			
Leu	Pro	Thr	Ser	Asp	Lys	His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg
1700						1705					1710			
Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro
1715						1720					1725			
Asn	Gln	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Ile	Arg
1730						1735					1740			
Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu
1745						1750					1755			
His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Pro	Ile
1760						1765					1770			
Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu
1775						1780					1785			
Tyr	Ala	Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala
1790						1795					1800			

Leu	Cys	Thr	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Gln
1805						1810					1815			
Ser	Gln	Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu
1820						1825					1830			
Leu	Ile	Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Ala
1835						1840					1845			
Cys	Lys	Asn	Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala
1850						1855					1860			
Leu	Tyr	Glu	Glu	Pro	Asp	Met	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln
1865						1870					1875			
Thr	Glu	Ser	Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu
1880						1885					1890			
Ser	Ile	Thr	Glu	Ile	Ser	Asn	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu
1895						1900					1905			
Glu	Val	Ala	Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val
1910						1915					1920			
Glu	Thr	Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Val	Gly	Gly	Ser	Asn
1925						1930					1935			
Glu	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu
1940						1945					1950			
Leu	Val	Gly	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile
1955						1960					1965			
Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	Glu	Gly
1970						1975					1980			
Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu
1985						1990					1995			
Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp
2000						2005					2010			
Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	Ala	His
2015						2020					2025			
Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr
2030						2035					2040			
Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys
2045						2050					2055			
Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile
2060						2065					2070			
Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro
2075						2080					2085			
Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr
2090						2095					2100			

Leu Met 2105	Ala His Val Ser	Leu His Ala Leu Gln Glu 2110 2115	Pro Asp Ala
Ala Glu 2120	Asn Gln Glu Pro	Glu Ala Lys Pro Gly Ala 2125 2130	Phe Gly Lys
Leu Tyr 2135	Asn Ile Ile Asn Thr	Val Lys Glu Leu Glu 2140 2145	Glu Glu Ala
Lys Ala 2150	Ile Glu Glu Pro	Pro Lys Lys Thr Pro Glu 2155 2160	Glu Lys Phe
Arg Lys 2165	Val Leu Ile Gln Thr	Ile Val Asn Trp Ala 2170 2175	Glu Glu Ser
Gln Ile 2180	Glu Thr Pro Lys	Leu Val Arg Glu Met Phe 2185 2190	Ser Leu Leu
Val Arg 2195	Gln Tyr Asp Ala	Val Gly Glu Leu Ile Arg 2200 2205	Ala Leu Glu
Lys Thr 2210	Tyr Val Ile Asn Ala	Lys Thr Lys Leu Asp 2215 2220	Val Ala Glu
Met Trp 2225	Val Gly Leu Ser	Gln Ile Arg Ala Leu Leu 2230 2235	Pro Val Gln
Met Ser 2240	Gln Glu Glu Glu	Glu Leu Met Arg Lys Arg 2245 2250	Leu Trp Lys
Leu Val 2255	Asn Asn His Thr	Phe Phe Gln His Pro Asp 2260 2265	Leu Ile Arg
Val Leu 2270	Arg Val His Glu	Asn Val Met Ala Val Met 2275 2280	Met Asn Thr
Leu Gly 2285	Arg Arg Ala Gln	Ala Gln Ser Asp Ala Gln 2290 2295	Pro Ser Ser
Gln Pro 2300	Val Ala Glu Asp	Ser Lys Glu Lys Asp Thr 2305 2310	Ser His Glu
Met Val 2315	Val Ala Cys Cys	Arg Phe Leu Cys Tyr Phe 2320 2325	Cys Arg Thr
Gly Arg 2330	Gln Asn Gln Lys	Ala Met Phe Asp His Phe 2335 2340	Asp Phe Leu
Leu Glu 2345	Asn Ser Asn Ile	Leu Leu Ser Arg Pro Ser 2350 2355	Leu Arg Gly
Ser Thr 2360	Pro Leu Asp Val	Ala Tyr Ser Ser Leu Met 2365 2370	Glu Asn Thr
Glu Leu 2375	Ala Leu Ala Leu	Arg Glu His Tyr Leu Glu 2380 2385	Lys Ile Ala
Val Tyr 2390	Leu Ser Arg Cys	Gly Leu Gln Ser Asn Ser 2395 2400	Glu Leu Val

Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu
2405						2410					2415			
Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu
2420						2425					2430			
Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg
2435						2440					2445			
Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly
2450						2455					2460			
Leu	Leu	Lys	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile
2465						2470					2475			
Ala	Asp	Arg	Arg	Lys	Leu	Arg	Glu	Met	Glu	Gln	Glu	Gly	Asp	Val
2480						2485					2490			
Asn	Phe	Ser	His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu	Asp	Tyr
2495						2500					2505			
Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val
2510						2515					2520			
Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Gly	Val	Ile	Ala	Leu
2525						2530					2535			
Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu
2540						2545					2550			
Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr
2555						2560					2565			
Leu	Asn	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	Ser	Asp	Met
2570						2575					2580			
Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	Gly	Leu	Phe
2585						2590					2595			
Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	Phe	Tyr	Lys
2600						2605					2610			
Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala	Thr	Met
2615						2620					2625			
Leu	Asp	Arg	Asn	Asp	Gly	Cys	Glu	Ser	Asp	Met	Ala	Leu	Ser	Met
2630						2635					2640			
Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His
2645						2650					2655			
Ala	Tyr	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp
2660						2665					2670			
Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu
2675						2680					2685			
Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu
2690						2695					2700			



Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys
2705						2710					2715			
Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala
2720						2725					2730			
Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys	Tyr	Tyr
2735						2740					2745			
Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser	Ser	Asp
2750						2755					2760			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2765						2770					2775			
Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2780						2785					2790			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2795						2800					2805			
Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys	Glu	Gln
2810						2815					2820			
Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln	Pro	Ile
2825						2830					2835			
Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr	Ile	Val
2840						2845					2850			
Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys
2855						2860					2865			
Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp	Ser	Gln
2870						2875					2880			
Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr
2885						2890					2895			
Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala
2900						2905					2910			
Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile
2915						2920					2925			
Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly
2930						2935					2940			
Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asp
2945						2950					2955			
Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg
2960						2965					2970			
Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp
2975						2980					2985			
Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly
2990						2995					3000			

Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys
3005						3010					3015			
Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr
3020						3025					3030			
Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys	Ala	Pro
3035						3040					3045			
Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu	Leu
3050						3055					3060			
Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp
3065						3070					3075			
Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe
3080						3085					3090			
Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys	Phe
3095						3100					3105			
Phe	Ser	Lys	Ala	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr
3110						3115					3120			
His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn	Val
3125						3130					3135			
Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	Leu	Phe
3140						3145					3150			
Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly
3155						3160					3165			
Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys
3170						3175					3180			
Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe	Ile
3185						3190					3195			
Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	Asp	Val
3200						3205					3210			
Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala	His	Leu
3215						3220					3225			
Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Ile	Asn
3230						3235					3240			
Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His	Leu	Ala
3245						3250					3255			
Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val
3260						3265					3270			
Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly	Thr	Asp
3275						3280					3285			
Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu
3290						3295					3300			

Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser	Ser
3305						3310					3315			
Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn
3320						3325					3330			
Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala
3335						3340					3345			
Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	Leu	Glu
3350						3355					3360			
Thr	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr
3365						3370					3375			
Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro	Leu	Leu
3380						3385					3390			
Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp	Asn	Val
3395						3400					3405			
Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala	Glu	His
3410						3415					3420			
Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys	Lys	Asn
3425						3430					3435			
Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala	Thr	Tyr
3440						3445					3450			
Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu	Arg	Asp
3455						3460					3465			
Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr	Asp	Asn
3470						3475					3480			
Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys	Ser	Ser
3485						3490					3495			
Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu	Asp	Trp
3500						3505					3510			
Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile
3515						3520					3525			
Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn	Asn	Val
3530						3535					3540			
Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn
3545						3550					3555			
Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe
3560						3565					3570			
Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met	Pro	Thr
3575						3580					3585			
Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro	Gln	Gly
3590						3595					3600			

Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg	Asp	Lys
3605						3610					3615			
Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg
3620						3625					3630			
Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu
3635						3640					3645			
Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Lys	Met	Ser	Glu
3650						3655					3660			
Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	Pro	Asp
3665						3670					3675			
Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr
3680						3685					3690			
Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	Glu	Thr
3695						3700					3705			
Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu	Arg	Ile
3710						3715					3720			
Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His
3725						3730					3735			
Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser	Ile
3740						3745					3750			
Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser	Leu
3755						3760					3765			
His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg	Thr
3770						3775					3780			
Tyr	Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu	Asn	Ile	Gly	Gln	Glu	Val
3785						3790					3795			
Met	Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	Leu	Lys
3800						3805					3810			
Lys	Ser	Asp	Val	Val	Glu	Glu	Gly	Glu	Lys	Pro	Asp	Pro	Leu	Thr
3815						3820					3825			
Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser
3830						3835					3840			
Gly	Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	His	Ile
3845						3850					3855			
Ile	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu
3860						3865					3870			
Glu	Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu	Ala	Glu	Asp	Glu	Gly	Arg
3875						3880					3885			
Ala	Ser	Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe
3890						3895					3900			

His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met	Val	Leu
3905						3910					3915			
Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met	Val	Met
3920						3925					3930			
Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile
3935						3940					3945			
Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys	Lys	Asp
3950						3955					3960			
Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser
3965						3970					3975			
Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly
3980						3985					3990			
Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His
3995						4000					4005			
Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr
4010						4015					4020			
Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln
4025						4030					4035			
Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp
4040						4045					4050			
Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His
4055						4060					4065			
Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe
4070						4075					4080			
Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr
4085						4090					4095			
Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala
4100						4105					4110			
His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe
4115						4120					4125			
Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp
4130						4135					4140			
Leu	Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Pro	Met
4145						4150					4155			
Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly
4160						4165					4170			
Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu
4175						4180					4185			
Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu
4190						4195					4200			

Thr	Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	Asp	Gly
4205						4210					4215			
Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys
4220						4225					4230			
Ser	Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	Cys	Glu
4235						4240					4245			
Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	Asp	Arg
4250						4255					4260			
Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu
4265						4270					4275			
Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala
4280						4285					4290			
Arg	Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro
4295						4300					4305			
Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	Ile	Glu
4310						4315					4320			
Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Glu
4325						4330					4335			
Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile
4340						4345					4350			
Val	Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn
4355						4360					4365			
Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu
4370						4375					4380			
Met	Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn	Arg	Glu
4385						4390					4395			
Ala	Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Asp	Asp	Glu	Arg	Ala	Gly
4400						4405					4410			
Lys	Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln	Ser	Val	Lys	Asp	Gly	Val
4415						4420					4425			
Ala	Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro	Ser	Asn	Ile	Lys	Ala	Lys
4430						4435					4440			
Ile	Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala	Val	Gly
4445						4450					4455			
Phe	Phe	Lys	Met	Phe	Phe	Tyr	Leu	Phe	Tyr	Tyr	Leu	Gly	Tyr	Gly
4460						4465					4470			
Val	Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu	Gly	Leu
4475						4480					4485			
Met	Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro	Pro	Pro	Glu	Pro	Thr	Glu
4490						4495					4500			

Glu	Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala	Thr	Gln
4505						4510					4515			
Ser	Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp	Thr	Gly
4520						4525					4530			
Gln	Met	Gln	Val	Ser	Ala	Phe	Gly	Leu	Asp	Ile	Thr	Lys	Glu	Asp
4535						4540					4545			
Asn	Gly	Gln	Ile	Gln	Val	Lys	Pro	His	Glu	Ser	Pro	Ser	Thr	Ser
4550						4555					4560			
Thr	Pro	Ser	Ser	Gly	Glu	Glu	Ala	Glu	Val	Ser	Pro	Asp	Glu	Ser
4565						4570					4575			
Ala	Asp	His	Thr	Glu	Glu	Gln	Arg	Pro	Pro	Ser	Leu	Ile	Asp	Leu
4580						4585					4590			
Leu	Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln	Ala	Gln	Glu	Arg	Met	Glu
4595						4600					4605			
Ala	Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu	Ala	Glu
4610						4615					4620			
Ser	Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu	Ser	Gln
4625						4630					4635			
Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe	Leu	Ala
4640						4645					4650			
Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe
4655						4660					4665			
Cys	Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr	Leu	Asp
4670						4675					4680			
Gly	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile	Ala	Gly
4685						4690					4695			
Gly	Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp	Gly	Ser
4700						4705					4710			
Gly	Glu	Ser	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val	His	Ile
4715						4720					4725			
Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met	Ala	Ala
4730						4735					4740			
Val	Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly	Tyr	Tyr
4745						4750					4755			
His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile
4760						4765					4770			
Ala	Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	Gln	Pro
4775						4780					4785			
Glu	Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser
4790						4795					4800			

Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys
4805						4810					4815			
Lys	Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile
4820						4825					4830			
Ser	Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala	Gln	Glu
4835						4840					4845			
Glu	Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn	Ile	Asp
4850						4855					4860			
Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	Asp	Asn
4865						4870					4875			
Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly
4880						4885					4890			
Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala
4895						4900					4905			
Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	Thr	His
4910						4915					4920			
Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	Ile	Ile
4925						4930					4935			
Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe
4940						4945					4950			
Tyr	Val	Gln	Glu	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys	His	Asp
4955						4960					4965			
Met	Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val	Arg	Ala
4970						4975					4980			
Gly	Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu	Pro	Pro	Asp	Gly	Asp	Asp
4985						4990					4995			
Ser	Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp	Ile	Ser	Phe	Phe	Phe	Phe
5000						5005					5010			
Ile	Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu	Gln	Gly	Leu	Ile	Ile	Asp
5015						5020					5025			
Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	Glu	Asp
5030						5035					5040			
Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Asn	Lys	Asp	Tyr	Phe
5045						5050					5055			
Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Arg	Glu	His
5060						5065					5070			
Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	Asn	Lys
5075						5080					5085			
Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met
5090						5095					5100			



Tyr Thr Gln Arg Cys Trp Asp Phe Phe Pro Val Gly Asp Cys Phe  
 5105 5110 5115

Arg Lys Gln Tyr Glu Asp Leu Met Gly Glu  
 5120 5125

<210> 129  
 <211> 15405  
 <212> DNA  
 <213> *Heliothis virescens*

<220>  
 <221> CDS  
 <222> (1) .. (15402)  
 <223>

<220>  
 <223> pXL-Hv2

<400> 129  
 atg gcg gaa gca gag ggg gga gca agc gag caa gat gat gtt tca ttc 48  
 Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe  
 1 5 10 15  
 ttg cgt acg gaa gac atg gtg tgc ctg tcg tgc aca gcg aca gga gag 96  
 Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
 20 25 30  
 agg gtg tgc ctg gct gcc gaa ggt ttc ggc aac cgg cac tgc ttc ctg 144  
 Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
 35 40 45  
 gag aat att gcc gac aag aac ata cca cct gat ctg tcg cag tgt gtg 192  
 Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
 50 55 60  
 ttt gtc atc gaa cag gcg ctt tca gta aga gct tta cag gag ttg gta 240  
 Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
 65 70 75 80  
 acg gct gcg ggt tct gaa act ggt aaa ggt acc ggt tct ggt cat cgt 288  
 Thr Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg  
 85 90 95  
 acg cta cta tac ggc aat gct att ctt ttg cga cat ctt aac agt gat 336  
 Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Leu Asn Ser Asp  
 100 105 110  
 atg tac ctg gcc tgc ctg tcg aca tca tca tcc cag gat aag ccg gcc 384  
 Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Gln Asp Lys Pro Ala  
 115 120 125  
 ttt gac gtg ggt ctg caa cag cac tcc cag ggt gaa gcc tgc tgg tgg 432  
 Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly Glu Ala Cys Trp Trp  
 130 135 140  
 acc ctg cat cct gcc agc aaa cag aga tcc gag ggt gag aag gtg cga 480  
 Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg

145	150	155	160	
gtc gga gat gac ttg att ctg gtc tcc gtg gct act gag aga tac ttg				528
Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu	165	170	175	
cac aca acg aaa gag aac gaa gta tcg ata gtg aac gcg tcg ttc cac				576
His Thr Thr Lys Glu Asn Glu Val Ser Ile Val Asn Ala Ser Phe His	180	185	190	
gtg acc cac tgg tcg gta cag ccc tat ggt act ggt ata tcg agg atg				624
Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met	195	200	205	
aag tat gta ggc tat gtg ttc gga ggt gat gtg ctg cgg ttc ttc cat				672
Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His	210	215	220	
gga ggt gac gag tgt ctc act ata cct agt acc tgg aca aag gat ggg				720
Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Thr Lys Asp Gly	225	230	235	240
ggg caa aat atc gta gtc tac gaa gga ggt tca gtg atg tct caa gcc				768
Gly Gln Asn Ile Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala	245	250	255	
cgg tct tta tgg cgc ctg gag ctg gct aga acc aag tgg gcc gga ggt				816
Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly	260	265	270	
ttc att aac tgg tac cat cct atg agg att cgg cac atc act act gga				864
Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly	275	280	285	
aga tat ctc gga gta aac gac cag aat gag ctg tat tta gtt agc aga				912
Arg Tyr Leu Gly Val Asn Asp Gln Asn Glu Leu Tyr Leu Val Ser Arg	290	295	300	
gag gaa gcc aca aca gct tcc tgt gcc ttc tgc ctg cgt cag gag aag				960
Glu Glu Ala Thr Thr Ala Ser Cys Ala Phe Cys Leu Arg Gln Glu Lys	305	310	315	320
gat gat cag aaa caa gtg tta gaa gac aag gac ttg gag gtc ata ggc				1008
Asp Asp Gln Lys Gln Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly	325	330	335	
gcg ccc atc atc aag tac ggt gac tcc acc gtc att gtg cag cat tcc				1056
Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val Ile Val Gln His Ser	340	345	350	
gag act ggc ttg tgg ctg tct tat aag tct tac gaa acg aag aag gag				1104
Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Glu	355	360	365	
gga gtg ggt aaa gta gaa gag aag caa gcg att ctc cac gag gaa ggc				1152
Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly	370	375	380	
aag atg gac gac ggc ctc gac ttc tcc agg tca cag gag gaa gaa tct				1200
Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser				

385		390		395		400	
agg act gct cga gtt atc aga aag tgt tct tcg ctg ttc act aag ttt	1248						
Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Lys Phe							
		405		410		415	
atc aat ggt ctg gaa act cta caa gag aac cgt cgt cac tcg atg ttc	1296						
Ile Asn Gly Leu Glu Thr Leu Gln Glu Asn Arg Arg His Ser Met Phe							
		420		425		430	
ttc gcg tca gtg aac ctg ggc gag atg gtg atg tgc ctc gag gat ctc	1344						
Phe Ala Ser Val Asn Leu Gly Glu Met Val Met Cys Leu Glu Asp Leu							
		435		440		445	
atc aac tac ttc gca caa ccc gat gaa gat atg gaa cac gaa gaa aag	1392						
Ile Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met Glu His Glu Glu Lys							
		450		455		460	
caa aac aaa ttc cgc gcc ctc cgc aac cgt cag gac ctg ttc caa gag	1440						
Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu							
		465		470		475	480
gaa ggc ata ctg aac ctg atc ctc gaa gct ata gac aag atc aac gtc	1488						
Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Val							
		485		490		495	
atc acg tct cag ggg ttc ctg gct ggt ttc ctg gcg gga gac gaa tct	1536						
Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu Ala Gly Asp Glu Ser							
		500		505		510	
gga cag agc tgg gaa atg ata tct gga tat ttg tat cag ttg ttg gcg	1584						
Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala							
		515		520		525	
gca ata ata aag ggc aac cac acg aac tgc gcg cag ttc gcg aac tcg	1632						
Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser							
		530		535		540	
aac cgg ctg aac tgg ctg ttc tcg cgc ctc ggc tcg cag gcc tcg ggc	1680						
Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Gly							
		545		550		555	560
gag ggc act ggc atg ctc gac gtg ctg cac tgc gtg ctc atc gac tcg	1728						
Glu Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser							
		565		570		575	
cct gaa gcg ttg aat atg atg agg gac gaa cac ata aaa gtg ata atc	1776						
Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile							
		580		585		590	
tct cta tta gaa aag cac ggg cgc gac cct aaa gta cta gat gtg tta	1824						
Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu							
		595		600		605	
tgt tca ctc tgc gtc ggt aac ggc gtc gcg gtg cgc tcg tca cag aac	1872						
Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn							
		610		615		620	
aac atc tgt gac tat ttg ctg ccc ggc aag aac ctg ttg ctg caa act	1920						
Asn Ile Cys Asp Tyr Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr							

625					630					635					640	
gcg	ctt	gta	gat	cac	gta	tct	agt	gtc	cgt	ccg	aac	atc	ttc	gtg	ggg	1968
Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	
				645					650					655		
cga	gta	gaa	ggg	tcg	gca	gtg	tac	cgc	aaa	tgg	tac	ttc	gaa	gtg	act	2016
Arg	Val	Glu		Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Phe	Glu	Val	Thr	
			660					665					670			
atg	gac	cac	ata	gag	aag	acc	aca	cat	atg	ata	cca	cat	cta	cgc	ata	2064
Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Ile	Pro	His	Leu	Arg	Ile	
		675					680					685				
gga	tgg	gct	aac	act	act	ggc	tac	gtc	cca	tac	ccg	ggg	ggg	ggg	gaa	2112
Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	
	690					695					700					
aag	tgg	gga	ggg	aac	ggc	gtg	gga	gac	gac	ctg	tac	tcg	tac	ggg	ttc	2160
Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Tyr	Gly	Phe	
705					710					715					720	
gac	ggc	gcc	tac	ctc	tgg	tcc	ggc	ggg	agg	aaa	act	ccc	gtc	aat	agg	2208
Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	Thr	Pro	Val	Asn	Arg	
				725					730					735		
act	cat	gct	gaa	gag	cct	tat	att	agg	aaa	ggg	gac	gtg	ata	ggg	tgt	2256
Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Cys	
			740					745					750			
gcg	tta	gac	ctg	acg	gta	ccc	atc	atc	aac	ttc	atg	ttc	aac	gga	gtg	2304
Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	Met	Phe	Asn	Gly	Val	
		755					760					765				
cgg	gtg	acg	gga	tcc	ttc	acc	aac	ttc	aat	ctg	gaa	ggc	atg	ttc	ttc	2352
Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	Glu	Gly	Met	Phe	Phe	
	770					775					780					
ccg	gtc	atc	agc	tgc	tct	agt	aaa	ttg	agt	tgc	cgg	ttc	ctg	ctg	ggc	2400
Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Leu	Gly	
785					790					795					800	
ggg	gaa	cat	ggg	aga	ctc	cgg	tac	gcg	gct	cca	gaa	ggc	tac	tcc	ccg	2448
Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro	Glu	Gly	Tyr	Ser	Pro	
				805					810					815		
ctg	gtg	gag	tct	ctc	ctg	ccg	cag	cag	atc	ctc	agc	ctg	gag	cct	tgc	2496
Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Glu	Pro	Cys	
			820					825					830			
ttc	tac	ttc	ggc	aac	ctg	tcc	aag	cgc	gcc	ctg	gct	gga	ccc	ccg	cta	2544
Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	Ala	Gly	Pro	Pro	Leu	
		835					840					845				
gta	cag	gac	gat	acg	gct	ttt	gtg	cct	aca	cct	gtt	gac	act	tta	cag	2592
Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	Val	Asp	Thr	Leu	Gln	
	850					855					860					
att	act	ctg	cct	aca	tat	gtg	gaa	caa	atc	aga	gac	aag	cta	gct	gaa	2640
Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	Asp	Lys	Leu	Ala	Glu	

865	870	875	880	
aat ata cac gaa atg tgg gct atg aat aag atc gaa gca ggc tgg atg				2688
Asn Ile His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Met				
	885	890	895	
tac ggc gat cag aga gaa gac ttg cac aag atc cac ccc tgc ctc gtg				2736
Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile His Pro Cys Leu Val				
	900	905	910	
ccc ttc gag cgt ctc ccg ccc gct gag aaa cga tac gac ata caa ctc				2784
Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ile Gln Leu				
	915	920	925	
gct gtg cag aca ctc aag aca atc ctg gct ctg ggc tac tac atc agc				2832
Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu Gly Tyr Tyr Ile Ser				
	930	935	940	
tta gat aag cct cca gca cgc atc cgc aac gtt cgt ctg ccc aac gaa				2880
Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val Arg Leu Pro Asn Glu				
	945	950	955	960
cct ttc atg cag tcc aac ggc tac aag cca gca cca ctc gac ctg agt				2928
Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser				
	965	970	975	
gct gtc acc ctg aca ccc aag atg gat gag cta gta gac cag ctg gct				2976
Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu Val Asp Gln Leu Ala				
	980	985	990	
gag aac acc cac aac ctt tgg gcc agg gag agg ata cag cag gga tgg				3024
Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp				
	995	1000	1005	
act tac gga ctt aat gag gac tcg gac atg cat cga tcc ccg cac				3069
Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met His Arg Ser Pro His				
	1010	1015	1020	
ctg gtg cca tac ccg aag gtt gac gat gcc atc aag aag gcc aac				3114
Leu Val Pro Tyr Pro Lys Val Asp Asp Ala Ile Lys Lys Ala Asn				
	1025	1030	1035	
agg gac aca gcc tcg gag act gtg agg acc ctg ctg gtc tac ggg				3159
Arg Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly				
	1040	1045	1050	
tat atg ctg gac ccg cct act ggg gag cag cat gaa gca ctc ttg				3204
Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln His Glu Ala Leu Leu				
	1055	1060	1065	
ttg gaa gcg tca aaa cag aag caa gcc gac ttc aga aca tac cgc				3249
Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp Phe Arg Thr Tyr Arg				
	1070	1075	1080	
gct gag aag aac tat gcc gtc agc tct ggg aag tgg tac ttc gag				3294
Ala Glu Lys Asn Tyr Ala Val Ser Ser Gly Lys Trp Tyr Phe Glu				
	1085	1090	1095	
ttt gag atc cta acg gct gga cct atg agg gtc ggc tgg gct cac				3339
Phe Glu Ile Leu Thr Ala Gly Pro Met Arg Val Gly Trp Ala His				

1100						1105						1110					
gct	gat	atg	gca	cca	gga	atg	atg	ctc	gga	caa	gac	gag	aac	tcc			3384
Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly	Gln	Asp	Glu	Asn	Ser			
1115						1120					1125						
tgg	gca	ttt	gat	ggg	tac	aat	gag	gaa	aaa	gtg	tac	agc	ggg	aac			3429
Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Val	Tyr	Ser	Gly	Asn			
1130						1135					1140						
act	gag	tct	ttc	ggc	aag	caa	tgg	gct	ggt	ggg	gac	gta	gtg	ggg			3474
Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val	Gly	Asp	Val	Val	Gly			
1145						1150					1155						
gtg	ttc	cta	gat	ctc	att	gat	aag	acg	ata	agt	ttc	tca	ctc	aac			3519
Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile	Ser	Phe	Ser	Leu	Asn			
1160						1165					1170						
ggg	gag	tta	ttg	atg	gat	gct	ctt	ggc	gga	gag	act	acg	ttt	gct			3564
Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala			
1175						1180					1185						
gat	gtc	cag	ggg	gac	aac	ttt	gta	cct	gct	tgc	acg	ctt	ggg	gtc			3609
Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val			
1190						1195					1200						
ggc	caa	aaa	gcc	agg	tta	aca	tac	ggg	cag	gac	gta	aac	acg	ctg			3654
Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	Asp	Val	Asn	Thr	Leu			
1205						1210					1215						
aaa	tac	ttc	aca	aca	tgt	ggg	ctg	cag	gag	gga	tat	gaa	cca	ttc			3699
Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe			
1220						1225					1230						
tgt	gtc	aat	atg	aag	aga	gac	gtg	act	cac	tgg	tac	acc	aaa	gac			3744
Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp			
1235						1240					1245						
cag	ccg	atc	ttc	gag	aat	acg	gat	gag	atg	atc	gac	acc	aga	ata			3789
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met	Ile	Asp	Thr	Arg	Ile			
1250						1255					1260						
gat	gtg	acc	agg	ata	cca	gct	ggg	tca	gat	aca	cct	cca	tgc	ctc			3834
Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu			
1265						1270					1275						
aag	att	tcc	cac	aac	acg	ttt	gag	acg	atg	gag	aaa	gct	aac	tgg			3879
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp			
1280						1285					1290						
gag	ttc	tta	cgt	ctc	tca	ctg	cct	gtc	atc	tgc	cat	aac	gag	ttc			3924
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Asn	Glu	Phe			
1295						1300					1305						
att	gac	gag	gca	gaa	aaa	gcc	agg	cgt	tgg	gta	gaa	atc	aag	gac			3969
Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp	Val	Glu	Ile	Lys	Asp			
1310						1315					1320						
cgc	caa	cag	atc	cta	atg	aaa	gag	gca	gtt	gaa	gct	cag	atg	ccc			4014
Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	Glu	Ala	Gln	Met	Pro			

1325	1330	1335	
gcc cat att gac cag atc atg Ala His Ile Asp Gln Ile Met 1340	agg agc ggt ttc acc Arg Ser Gly Phe Thr 1345	atg aac gat Met Asn Asp 1350	4059
att aaa ggt ttg cac tac gaa Ile Lys Gly Leu His Tyr Glu 1355	gac aat cag gaa gag Asp Asn Gln Glu 1360	ttg ccc agc Leu Pro Ser 1365	4104
tcc aag atg aag cgc ctg cct Ser Lys Met Lys Arg Leu Pro 1370	tca agg cca cca cgt Ser Arg Pro Pro Arg 1375	aag gga tcc Lys Gly Ser 1380	4149
atg aca aga ggt gtt act ata Met Thr Arg Gly Val Thr Ile 1385	caa aat tac aat aat Gln Asn Tyr Asn Asn 1390	ttg caa cca Leu Gln Pro 1395	4194
ggt caa gtc aat ggc atg cac Gly Gln Val Asn Gly Met His 1400	cgg tcg acc agt gaa Arg Ser Thr Ser Glu 1405	gct gaa atg Ala Glu Met 1410	4239
gcc aag tat gac ttg gga gcg Ala Lys Tyr Asp Leu Gly Ala 1415	caa ggt ttg acg cct Gln Gly Leu Thr Pro 1420	gat gat aag Asp Asp Lys 1425	4284
aag gac aag agg gga cga tcg Lys Asp Lys Arg Gly Arg Ser 1430	cct ttc aag ttc ttc Pro Phe Lys Phe Phe 1435	aga agc aag Arg Ser Lys 1440	4329
cgc ggc gaa agc agt gat cgt Arg Gly Glu Ser Ser Asp Arg 1445	gcc aaa tcc cgt aaa Ala Lys Ser Arg Lys 1450	tcc aaa act Ser Lys Thr 1455	4374
cca gat ccc ttc agc gat acc Pro Asp Pro Phe Ser Asp Thr 1460	gag gta tca cca gaa Glu Val Ser Pro Glu 1465	cgt ggt gct Arg Gly Ala 1470	4419
cga agg cct aac cct cag atc Arg Arg Pro Asn Pro Gln Ile 1475	aaa gtg tca cag gcc Lys Val Ser Gln Ala 1480	aat caa aga Asn Gln Arg 1485	4464
tat aac ggc atg aac gcg cgt Tyr Asn Gly Met Asn Ala Arg 1490	cct agc agg acc aac Pro Ser Arg Thr Asn 1495	ttg tat ggg Leu Tyr Gly 1500	4509
agc caa gtt ggt tta aac atg Ser Gln Val Gly Leu Asn Met 1505	gcg acg ccc acg caa Ala Thr Pro Thr Gln 1510	gac agg aag Asp Arg Lys 1515	4554
cag atg acg acg agc act ctc Gln Met Thr Thr Ser Thr Leu 1520	gcg cag tcg gct acg Ala Gln Ser Ala Thr 1525	gaa act gtc Glu Thr Val 1530	4599
ggc aat gag atc ttc gat gca Gly Asn Glu Ile Phe Asp Ala 1535	gag tgc ttg aag ctc Glu Cys Leu Lys Leu 1540	atc aat gag Ile Asn Glu 1545	4644
tac ttt tat gga gtc agg atc Tyr Phe Tyr Gly Val Arg Ile 1550	tac cca ggt cag gac Tyr Pro Gly Gln Asp 1555	cca aca cac Pro Thr His 1560	4689

1550	1555	1560	
gtg tac atc ggc tgg gtg acc Val Tyr Ile Gly Trp Val Thr 1565	acc cag tac cac ttg Thr Gln Tyr His Leu 1570	cac tct aag His Ser Lys 1575	4734
gac ttc aac cag agc aag gtc Asp Phe Asn Gln Ser Lys Val 1580	acc aag tcc tct gtc Thr Lys Ser Ser Val 1585	atc atc act Ile Ile Thr 1590	4779
gat gat tac gat agg gtt gtt Asp Asp Tyr Asp Arg Val Val 1595	gag aac gta aac cgg Glu Asn Val Asn Arg 1600	cag tcc tgc Gln Ser Cys 1605	4824
tac atg gtg cga gct gac gag Tyr Met Val Arg Ala Asp Glu 1610	cta tac aac gag gtg Leu Tyr Asn Glu Val 1615	atg gcg gaa Met Ala Glu 1620	4869
gcc acg gcc aag ggc gcc tcg Ala Thr Ala Lys Gly Ala Ser 1625	cag ggc atg ttc atc Gln Gly Met Phe Ile 1630	ggc tgc tcc Gly Cys Ser 1635	4914
gtc gac acc tcc acc ggc agc Val Asp Thr Ser Thr Gly Ser 1640	gtg tcc ttc acc tgc Val Ser Phe Thr Cys 1645	gag ggg aag Glu Gly Lys 1650	4959
gac acc agc ttc aag ttc aag Asp Thr Ser Phe Lys Phe Lys 1655	atg gaa cca gaa aca Met Glu Pro Glu Thr 1660	aaa ctg ttc Lys Leu Phe 1665	5004
ccc gcg atc ttc gta gaa gcg Pro Ala Ile Phe Val Glu Ala 1670	acc tcc aag gag atc Thr Ser Lys Glu Ile 1675	ctg cag ata Leu Gln Ile 1680	5049
gag ctg ggc aga tca gcc acc Glu Leu Gly Arg Ser Ala Thr 1685	agc ctt cca cta tca Ser Leu Pro Leu Ser 1690	gcc gct gta Ala Ala Val 1695	5094
cta cca acg agt gat aag cat Leu Pro Thr Ser Asp Lys His 1700	gtc ata cca cag ttc Val Ile Pro Gln Phe 1705	cca ccg agg Pro Pro Arg 1710	5139
ttg aag gtg cag tgc ttg aaa Leu Lys Val Gln Cys Leu Lys 1715	cca cat cag tgg gct Pro His Gln Trp Ala 1720	agg gta ccg Arg Val Pro 1725	5184
aac caa tcc cta caa gtc cac Asn Gln Ser Leu Gln Val His 1730	gct ctg aag ttg tcc Ala Leu Lys Leu Ser 1735	gac atc cgc Asp Ile Arg 1740	5229
ggg tgg tcg atg ctg tgt gaa Gly Trp Ser Met Leu Cys Glu 1745	gac gca gtg tct atg Asp Ala Val Ser Met 1750	ctg gct ttg Leu Ala Leu 1755	5274
cac ata ccg gag gaa gat cgt His Ile Pro Glu Glu Asp Arg 1760	tgc ata gac att ttg Cys Ile Asp Ile Leu 1765	gag ctg ata Glu Leu Ile 1770	5319
gaa atg gac aaa ctt tta agt Glu Met Asp Lys Leu Leu Ser 1775	ttc cat tct cac acc Phe His Ser His Thr 1780	ctc acg tta Leu Thr Leu 1785	5364



1775	1780	1785	
tac gct gct tta tgt tac Tyr Ala Ala Leu Cys Tyr 1790	cag agt aac tac agg Gln Ser Asn Tyr Arg 1795	gct gcc cac gct Ala Ala His Ala 1800	5409
ctg tgc acg cac gtg gac Leu Cys Thr His Val Asp 1805	cag aag cag ctg ctg Gln Lys Gln Leu Leu 1810	tac gcg atc cag Tyr Ala Ile Gln 1815	5454
tcg cag tac atg tcg ggc ccg Ser Gln Tyr Met Ser Gly Pro 1820	ctg cgc caa ggc ttc Leu Arg Gln Gly Phe 1825	tac gat ctt Tyr Asp Leu 1830	5499
ctc ata gcg ctg cat ctc gag Leu Ile Ala Leu His Leu Glu 1835	tcg cat gcc acc acc Ser His Ala Thr Thr 1840	atg gag gcg Met Glu Ala 1845	5544
tgt aag aac gag ttc gtg atc Cys Lys Asn Glu Phe Val Ile 1850	ccg ctg ggc ccg gag Pro Leu Gly Pro Glu 1855	ctg aag gcg Leu Lys Ala 1860	5589
ctg tac gag gag ccc gac atg Leu Tyr Glu Glu Pro Asp Met 1865	gga cac tcg ctg cgc Gly His Ser Leu Arg 1870	tcg ctg cag Ser Leu Gln 1875	5634
acc gag agc gtg cgg ccg cag Thr Glu Ser Val Arg Pro Gln 1880	atg aag atg acc gat Met Lys Met Thr Asp 1885	atc gct gaa Ile Ala Glu 1890	5679
agt ata acc gag atc agc aac Ser Ile Thr Glu Ile Ser Asn 1895	cta tac tcg ccg tac Leu Tyr Ser Pro Tyr 1900	ttc ccg ctg Phe Pro Leu 1905	5724
gag gtg gtg cgc gag ttc gtg Glu Val Val Arg Glu Phe Val 1910	atg cag gcg ctg gct Met Gln Ala Leu Ala 1915	gaa gcc gtg Glu Ala Val 1920	5769
gag acc aac cag gtg cac aac Glu Thr Asn Gln Val His Asn 1925	cgg gat cct gtc ggg Arg Asp Pro Val Gly 1930	ggg agc aat Gly Ser Asn 1935	5814
gag aac ctg ttc ctg cct cta Glu Asn Leu Phe Leu Pro Leu 1940	ata aag ctg gtg gac Ile Lys Leu Val Asp 1945	cgt ctt cta Arg Leu Leu 1950	5859
cta gtc ggc atg atg cgc gac Leu Val Gly Met Met Arg Asp 1955	gag gat gtg gag aag Glu Asp Val Glu Lys 1960	cta ctc atc Leu Leu Ile 1965	5904
atg acc aac cct gag acg tgg Met Thr Asn Pro Glu Thr Trp 1970	gac ccc tcg ttt gat Asp Pro Ser Phe Asp 1975	aaa gag ggt Lys Glu Gly 1980	5949
aaa gac gag cac cgc aaa ggt Lys Asp Glu His Arg Lys Gly 1985	cta ctc cac atg aaa Leu Leu His Met Lys 1990	atg gcg gaa Met Ala Glu 1995	5994
ggc gct aag ctg cag atg tgt Gly Ala Lys Leu Gln Met Cys 2000	tac tta ctg caa cat Tyr Leu Leu Gln His 2005	ctc aac gac Leu Asn Asp 2010	6039

2000						2005						2010						
ata	cag	ctg	cgg	cac	agg	gtc	gaa	gct	atc	att	gcg	ttt	gcg	cat				6084
Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	Ala	His				
2015						2020						2025						
gac	ttc	gtc	ggg	gat	cta	cag	act	gat	cag	ctc	aga	cgt	tac	acg				6129
Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr				
2030						2035						2040						
gaa	atc	aag	cag	tcg	gac	ttg	ccg	agc	gcg	gtg	gcc	gct	aag	aag				6174
Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys				
2045						2050						2055						
acc	agg	gag	ttc	cgg	tgt	ccg	cct	aga	gaa	cag	atg	aac	gct	ata				6219
Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile				
2060						2065						2070						
ttg	agt	ttc	aag	cac	tta	gag	gag	gag	gac	aag	gag	aac	tgt	ccg				6264
Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro				
2075						2080						2085						
tgc	ggc	gag	gag	ctg	atc	gcg	cgc	atg	aac	gag	ttc	cac	gac	acc				6309
Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr				
2090						2095						2100						
ctc	atg	gcg	cac	gtc	tcg	ctg	cac	gcg	ctg	cag	gag	ccc	gat	gcc				6354
Leu	Met	Ala	His	Val	Ser	Leu	His	Ala	Leu	Gln	Glu	Pro	Asp	Ala				
2105						2110						2115						
gcg	gaa	aat	caa	gaa	cct	gaa	gca	aaa	ccg	ggg	gca	ttc	ggc	aag				6399
Ala	Glu	Asn	Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys				
2120						2125						2130						
cta	tac	aac	att	atc	aat	acg	gtc	aag	gaa	tta	gaa	gag	gaa	gct				6444
Leu	Tyr	Asn	Ile	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Glu	Ala				
2135						2140						2145						
aag	gca	ata	gaa	gag	cct	ccg	aag	aag	acg	cct	gag	gag	aag	ttc				6489
Lys	Ala	Ile	Glu	Glu	Pro	Pro	Lys	Lys	Thr	Pro	Glu	Glu	Lys	Phe				
2150						2155						2160						
cgt	aag	gtc	ctc	atc	cag	acc	ata	gtg	aac	tgg	gct	gag	gag	tcg				6534
Arg	Lys	Val	Leu	Ile	Gln	Thr	Ile	Val	Asn	Trp	Ala	Glu	Glu	Ser				
2165						2170						2175						
cag	ata	gaa	aca	ccc	aaa	ctc	gtc	aga	gaa	atg	ttc	agc	ctt	ctt				6579
Gln	Ile	Glu	Thr	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu				
2180						2185						2190						
gtc	cgc	cag	tac	gac	gca	gta	ggc	gag	ctg	atc	cgc	gct	tta	gag				6624
Val	Arg	Gln	Tyr	Asp	Ala	Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu				
2195						2200						2205						
aag	aca	tac	gtc	atc	aac	gct	aag	acc	aag	ttg	gat	gtc	gcg	ggg				6669
Lys	Thr	Tyr	Val	Ile	Asn	Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Gly				
2210						2215						2220						
atg	tgg	gtg	ggg	ctc	agc	cag	atc	cga	gcc	ctc	ctg	ccg	gtg	cag				6714
Met	Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln				

2225						2230						2235						
atg	agc	cag	gag	gaa	gag	gaa	ctc	atg	agg	aag	agg	ctc	tgg	aaa				6759
Met	Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys				
2240						2245						2250						
ctt	gtg	aac	aac	cac	acg	ttc	ttc	cag	cat	cca	gac	tta	atc	aga				6804
Leu	Val	Asn	Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg				
2255						2260						2265						
gtg	ctc	cgc	gtg	cac	gag	aac	gtg	atg	gcg	gtg	atg	atg	aac	acg				6849
Val	Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr				
2270						2275						2280						
ctc	ggc	cgc	cgc	gcg	cag	gcg	cag	tcc	gac	gca	cag	ccc	tcc	tcg				6894
Leu	Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Gln	Pro	Ser	Ser				
2285						2290						2295						
cag	cct	gtc	gca	gag	gat	aac	aag	gag	aag	gac	aca	tca	cac	gag				6939
Gln	Pro	Val	Ala	Glu	Asp	Asn	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu				
2300						2305						2310						
atg	gtg	gta	gct	tgc	tgc	cgt	ttc	ctc	tgc	tac	ttc	tgc	cgc	acc				6984
Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr				
2315						2320						2325						
ggg	aga	cag	aac	cag	aag	gca	atg	ttc	gac	cac	ttc	gac	ttc	ctc				7029
Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu				
2330						2335						2340						
ctg	gag	aac	tcc	aac	atc	ttg	ctg	tcc	aga	cct	tcg	ctg	aga	gga				7074
Leu	Glu	Asn	Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly				
2345						2350						2355						
tcc	acg	cct	cta	gac	gtg	gct	tat	tcc	agt	ctt	atg	gag	aac	act				7119
Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr				
2360						2365						2370						
gaa	ctg	gcg	ctg	gct	ttg	aga	gag	cac	tac	ctg	gag	aag	ata	gca				7164
Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala				
2375						2380						2385						
gta	tac	ctg	tcc	cgt	tgt	ggg	ctg	cag	agc	aac	tcg	gag	ctg	gtg				7209
Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val				
2390						2395						2400						
gag	aag	ggg	tac	cct	gac	ctc	ggc	tgg	gat	ccg	gtc	gag	ggg	gag				7254
Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu				
2405						2410						2415						
cgg	tat	ctt	gac	ttc	ctg	agg	ttc	tgt	gtt	tgg	gta	aac	ggc	gaa				7299
Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu				
2420						2425						2430						
agc	gta	gaa	gaa	aac	gcg	aat	cta	gtg	atc	cgt	ctc	ctg	atc	cgt				7344
Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg				
2435						2440						2445						
cgt	ccg	gag	tgc	ctc	ggg	ccg	gcg	ctg	cgc	ggc	gag	ggc	gag	ggc				7389
Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly				

2450	2455	2460	
ctg ctg aag gct atc gtc gac gcc aac aag atg agc gag agg atc			7434
Leu Leu Lys Ala Ile Val Asp Ala Asn Lys Met Ser Glu Arg Ile			
2465	2470	2475	
gcc gac agg agg aag ctc agg gaa atg gag cag gaa gga gat gtt			7479
Ala Asp Arg Arg Lys Leu Arg Glu Met Glu Gln Glu Gly Asp Val			
2480	2485	2490	
aac ttc agc cac cct ctc ccg gag tca gat gag gat gag gac tac			7524
Asn Phe Ser His Pro Leu Pro Glu Ser Asp Glu Asp Glu Asp Tyr			
2495	2500	2505	
ata gac acg ggg gcc gcc atc ttg aac ttc tac tgt aca ttg gta			7569
Ile Asp Thr Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr Leu Val			
2510	2515	2520	
gat ctg ctc gga aga tgt gct cct gat gct ggc gtt att gct ctc			7614
Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Gly Val Ile Ala Leu			
2525	2530	2535	
ggc aag aac gag tct ctc cgt gcc cgc gct atc ctg cgg tcg ctg			7659
Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu			
2540	2545	2550	
gtg ccg ctg gag gac ctg cag gga gtg ctg agc ctg cgc ttc acg			7704
Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Arg Phe Thr			
2555	2560	2565	
ctc aac aac cct gct gct gga gag gaa cga ccc aag tct gat atg			7749
Leu Asn Asn Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser Asp Met			
2570	2575	2580	
cca tcg ggt ctg atc ccg gga cac aag cag agc gtg gga ctg ttc			7794
Pro Ser Gly Leu Ile Pro Gly His Lys Gln Ser Val Gly Leu Phe			
2585	2590	2595	
ctg gag aga gtg tac ggc atc gaa act cag gag ttg ttc tac aaa			7839
Leu Glu Arg Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe Tyr Lys			
2600	2605	2610	
ctg ctg gag gaa gcc ttc ctg cct gac ctc agg gct gcc act atg			7884
Leu Leu Glu Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala Thr Met			
2615	2620	2625	
ctg gac agg aac gac ggc tgc gaa tca gac atg gcg ctg tcg atg			7929
Leu Asp Arg Asn Asp Gly Cys Glu Ser Asp Met Ala Leu Ser Met			
2630	2635	2640	
aac cgc tac atc ggc aac tcg atc ctg ccg ctg ctg atc aaa cac			7974
Asn Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile Lys His			
2645	2650	2655	
gct tac ttc tac aac gaa gct gag aac tac gcc agt tta ttg gat			8019
Ala Tyr Phe Tyr Asn Glu Ala Glu Asn Tyr Ala Ser Leu Leu Asp			
2660	2665	2670	
gcc acg cta cat act gtt tat agg tta tcg aag aac cgc atg tta			8064
Ala Thr Leu His Thr Val Tyr Arg Leu Ser Lys Asn Arg Met Leu			

2675	2680	2685	
acc aag ggt caa cgt gaa gcg gtg tca gac ttc cta gtg gcg ctt			8109
Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala Leu			
2690	2695	2700	
act tca gcg atg cag ccc tct atg ttg ctc aag ctg ctc agg aaa			8154
Thr Ser Ala Met Gln Pro Ser Met Leu Leu Lys Leu Leu Arg Lys			
2705	2710	2715	
ttg acg gtc gac gtg tct aaa ctg tcc gag tat act act gtc gct			8199
Leu Thr Val Asp Val Ser Lys Leu Ser Glu Tyr Thr Thr Val Ala			
2720	2725	2730	
ctt agg ctg ctg acg ctg cac tac gag cgc tgc gcg aag tac tac			8244
Leu Arg Leu Leu Thr Leu His Tyr Glu Arg Cys Ala Lys Tyr Tyr			
2735	2740	2745	
ggc agc acg ggc gcg ggg cag ggc gcg ttc ggc gcg tcg tcg gac			8289
Gly Ser Thr Gly Ala Gly Gln Gly Ala Phe Gly Ala Ser Ser Asp			
2750	2755	2760	
gag gag aag cgc ctc acc atg atg ctc ttc tcc aac atc ttc gac			8334
Glu Glu Lys Arg Leu Thr Met Met Leu Phe Ser Asn Ile Phe Asp			
2765	2770	2775	
tcg ctc agc aag atg gac tac gag ccc gag ctc ttc ggg aag gcg			8379
Ser Leu Ser Lys Met Asp Tyr Glu Pro Glu Leu Phe Gly Lys Ala			
2780	2785	2790	
ctg ccc tgt ctt att gct ata gga tgc gct ctg cct cct gac tac			8424
Leu Pro Cys Leu Ile Ala Ile Gly Cys Ala Leu Pro Pro Asp Tyr			
2795	2800	2805	
tct ctc tca aag aac tat gat gat gag ttt tac ggc aaa gag caa			8469
Ser Leu Ser Lys Asn Tyr Asp Asp Glu Phe Tyr Gly Lys Glu Gln			
2810	2815	2820	
gct gca ggt gac cta gac aac ccc caa tac gac cct cag ccc ata			8514
Ala Ala Gly Asp Leu Asp Asn Pro Gln Tyr Asp Pro Gln Pro Ile			
2825	2830	2835	
aac acg tcc tca gta gca ttg aac aat gat ctc aac acg atc gta			8559
Asn Thr Ser Ser Val Ala Leu Asn Asn Asp Leu Asn Thr Ile Val			
2840	2845	2850	
cag aag ttc tcg gaa cat tac cac gat gcg tgg gct agt agg aag			8604
Gln Lys Phe Ser Glu His Tyr His Asp Ala Trp Ala Ser Arg Lys			
2855	2860	2865	
att gag aac ggc tgg gtg tat ggg gag ggc tgg tct gat agc cag			8649
Ile Glu Asn Gly Trp Val Tyr Gly Glu Gly Trp Ser Asp Ser Gln			
2870	2875	2880	
aag act cat cct agg ctg aag cct tat aat atg ctt aat gat tat			8694
Lys Thr His Pro Arg Leu Lys Pro Tyr Asn Met Leu Asn Asp Tyr			
2885	2890	2895	
gaa aaa gag cgt tac aag gag cca gta cgt gaa tct ctg aag gca			8739
Glu Lys Glu Arg Tyr Lys Glu Pro Val Arg Glu Ser Leu Lys Ala			

2900							2905							2910							
ctt	cta	gcc	atc	ggg	tgg	tct	gta	gaa	cat	tca	gaa	gta	gac	ata							8784
Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile							
	2915						2920					2925									
ccg	agt	aac	aac	cga	agc	tcc	atg	aga	agg	cag	tcc	aag	tcg	gga							8829
Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly							
	2930						2935					2940									
ggc	cgc	cct	ccc	gaa	att	gtg	cag	aca	gac	tcg	gcg	act	ccg	ttc							8874
Gly	Arg	Pro	Pro	Glu	Ile	Val	Gln	Thr	Asp	Ser	Ala	Thr	Pro	Phe							
	2945						2950					2955									
aac	tac	aac	cct	cac	cca	gtc	gac	atg	acc	aac	ttg	acg	cta	tcg							8919
Asn	Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser							
	2960						2965					2970									
agg	gag	atg	cag	aac	atg	gcg	gag	agg	ctc	gct	gac	aac	gca	cac							8964
Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	His							
	2975						2980					2985									
gac	atc	tgg	gcg	aag	aag	aag	aag	gaa	gaa	ctc	gtt	act	aat	gga							9009
Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly							
	2990						2995					3000									
ggg	ggc	atc	cac	ccc	caa	cta	gta	ccc	tac	gac	ctc	cta	acg	gac							9054
Gly	Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp							
	3005						3010					3015									
aaa	gaa	aag	aag	aaa	gat	cga	gaa	cgt	tct	caa	gag	ttc	ctc	aaa							9099
Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys							
	3020						3025					3030									
tac	ctt	caa	tac	caa	ggg	tac	aag	ctc	cac	cgg	ccc	agc	aag	gcg							9144
Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys	Ala							
	3035						3040					3045									
cca	caa	agt	gat	acg	gaa	caa	acc	act	acg	ggg	gta	gca	ata	gag							9189
Pro	Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu							
	3050						3055					3060									
ttg	aga	ttc	gca	tac	tcg	ctc	ctc	gag	aaa	ttg	atc	cag	tac	atc							9234
Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile							
	3065						3070					3075									
gat	agg	gcc	acc	att	aat	atg	aag	ctt	ttg	aaa	cct	tcc	act	acg							9279
Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr							
	3080						3085					3090									
ttt	agt	agg	aga	agt	agt	ttt	aag	act	agt	acc	agg	gat	att	aag							9324
Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys							
	3095						3100					3105									
ttc	ttt	tct	aag	gtg	gtg	ctg	cct	cta	atg	gag	aag	tat	ttc	tcg							9369
Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser							
	3110						3115					3120									
acg	cat	cgt	aac	tac	ttc	ata	gct	gta	gct	acg	gcg	acg	aat	aat							9414
Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn							

3125						3130						3135						
gtt	ggt	gca	gcc	agc	ctg	aag	gag	aaa	gag	atg	gta	gct	gct	ctg		9459		
Val	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	Leu				
3140						3145						3150						
ttc	tgt	aag	ctg	gct	agc	ttg	ctt	aga	tct	aga	ctc	gca	gct	ttc		9504		
Phe	Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe				
3155						3160						3165						
ggt	cct	gac	gtc	cgc	atc	aca	gtc	cgc	tgt	ctc	caa	gtg	ttg	gtg		9549		
Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	Val				
3170						3175						3180						
aag	ggc	atc	gac	gcc	aag	tcc	tta	gtg	aag	aac	tgc	ccc	gag	ttc		9594		
Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe				
3185						3190						3195						
atc	agg	acc	tcc	atg	ttg	acc	ttc	ttc	aac	aat	gtc	gct	gat	gat		9639		
Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	Asp				
3200						3205						3210						
gta	ggg	cat	acg	atc	atg	aat	ttg	cag	gat	ggg	aaa	tac	gca	cac		9684		
Val	Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala	His				
3215						3220						3225						
cta	cga	ggg	acc	cac	ttg	aag	aca	tcc	acg	tct	ctc	ggc	tat	atc		9729		
Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Ile				
3230						3235						3240						
aac	gga	gta	ctg	ctc	ccc	ata	ctg	aca	gcc	aaa	ttc	gac	cat	ctg		9774		
Asn	Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His	Leu				
3245						3250						3255						
gct	aac	tgc	gag	tac	ggg	gct	gat	ctg	ttg	ttg	gac	gag	ata	caa		9819		
Ala	Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln				
3260						3265						3270						
gtg	gcg	tca	tac	aag	atg	ttg	ggc	tcc	ctg	tac	gcg	ctc	ggc	acg		9864		
Val	Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly	Thr				
3275						3280						3285						
gac	gct	tcg	ctc	aca	cac	gac	aga	aag	tac	ctc	aag	act	gag	att		9909		
Asp	Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile				
3290						3295						3300						
gag	aga	cat	aaa	cct	gct	ttg	ggg	tca	tgt	cta	ggg	gcg	ttc	agt		9954		
Glu	Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser				
3305						3310						3315						
tcg	aca	ttc	cca	gta	gcg	ttc	ctg	gag	cct	cac	ttg	aac	aaa	cac		9999		
Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His				
3320						3325						3330						
aac	cag	ttc	tcc	ttg	ctg	aac	agg	atc	gct	gac	cat	tct	ttg	gaa		10044		
Asn	Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu				
3335						3340						3345						
gcc	caa	gac	ata	atg	cag	aaa	atg	gaa	caa	tgc	atg	ccg	acg	tta		10089		
Ala	Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	Leu				

3350		3355		3360	
gag gcg atc tta ggc gag gtg gac caa ttc gtg gag tca gac aag	10134				
Glu Ala Ile Leu Gly Glu Val Asp Gln Phe Val Glu Ser Asp Lys					
3365		3370		3375	
acg tac aac gaa gcg ccg cat atc atc gat gtg gtg tta cct tta	10179				
Thr Tyr Asn Glu Ala Pro His Ile Ile Asp Val Val Leu Pro Leu					
3380		3385		3390	
ctc tgt tct tac ttg ccg ttc tgg tgg gca cag ggg cct gat aat	10224				
Leu Cys Ser Tyr Leu Pro Phe Trp Trp Ala Gln Gly Pro Asp Asn					
3395		3400		3405	
gtt act cct act ggc gga aac cac gta aca atg gta aca gcg gaa	10269				
Val Thr Pro Thr Gly Gly Asn His Val Thr Met Val Thr Ala Glu					
3410		3415		3420	
cac atg aac cag ctc ctc aag aat gtt ctg aag ctc atc aaa aag	10314				
His Met Asn Gln Leu Leu Lys Asn Val Leu Lys Leu Ile Lys Lys					
3425		3430		3435	
aac atc ggc aat gag aac gcg ccg tgg atg acc cgc ata gcc acc	10359				
Asn Ile Gly Asn Glu Asn Ala Pro Trp Met Thr Arg Ile Ala Thr					
3440		3445		3450	
tac acc cag cag atc atc atc aac agc tcc gag gag ttg ctg agg	10404				
Tyr Thr Gln Gln Ile Ile Ile Asn Ser Ser Glu Glu Leu Leu Arg					
3455		3460		3465	
gat tcc ttc ctg ccg ctc gct gaa cgt gtt cgc aag cgc acg gac	10449				
Asp Ser Phe Leu Pro Leu Ala Glu Arg Val Arg Lys Arg Thr Asp					
3470		3475		3480	
aat atg ttc cat aag gag gag agc ttg aga ggg ttt att aag tcg	10494				
Asn Met Phe His Lys Glu Glu Ser Leu Arg Gly Phe Ile Lys Ser					
3485		3490		3495	
tca aca gac gac aca tct caa gta gag tca cag ata caa gaa gac	10539				
Ser Thr Asp Asp Thr Ser Gln Val Glu Ser Gln Ile Gln Glu Asp					
3500		3505		3510	
tgg cag ctg ctg gtc aga gac atc tac tcc ttc tac ccg cta ctc	10584				
Trp Gln Leu Leu Val Arg Asp Ile Tyr Ser Phe Tyr Pro Leu Leu					
3515		3520		3525	
atc aag tac gtc gac ctg cag agg aac cac tgg ctc agg aac aat	10629				
Ile Lys Tyr Val Asp Leu Gln Arg Asn His Trp Leu Arg Asn Asn					
3530		3535		3540	
gtt cca gag gcg gaa gag ctg tac aac cac gtg gcc gaa atc ttc	10674				
Val Pro Glu Ala Glu Glu Leu Tyr Asn His Val Ala Glu Ile Phe					
3545		3550		3555	
aac ata tgg tcg aag agc cag tac ttc ttg aag gag gaa cag aac	10719				
Asn Ile Trp Ser Lys Ser Gln Tyr Phe Leu Lys Glu Glu Gln Asn					
3560		3565		3570	
ttc atc tct gcc aac gag att gat aac atg gtg ctg att atg cca	10764				
Phe Ile Ser Ala Asn Glu Ile Asp Asn Met Val Leu Ile Met Pro					



3575		3580		3585	
aca gca aca aga aga gtg aca gca gta aca gat ggt act cct caa 10809	Thr Ala Thr Arg Arg Val Thr Ala Val Thr Asp Gly Thr Pro Gln				
3590		3595		3600	
ggc ggt gga aag aaa aag aag aag cac cgt gat aag aaa cgc gac 10854	Gly Gly Gly Lys Lys Lys Lys Lys His Arg Asp Lys Lys Arg Asp				
3605		3610		3615	
aaa gac aag gaa gtc caa gcg tcc cta atg gta gct tgt ctg aag 10899	Lys Asp Lys Glu Val Gln Ala Ser Leu Met Val Ala Cys Leu Lys				
3620		3625		3630	
agg ttg cta cca gtt ggc ctt aac cta ttc gct ggc aga gaa caa 10944	Arg Leu Leu Pro Val Gly Leu Asn Leu Phe Ala Gly Arg Glu Gln				
3635		3640		3645	
gaa ctg gtg cag cat tgt aaa gac agg ttc ctg aag gta ggg acc 10989	Glu Leu Val Gln His Cys Lys Asp Arg Phe Leu Lys Val Gly Thr				
3650		3655		3660	
ctc aag aaa atg tca gaa caa gat gtg gca gaa ttc gcg aag acc 11034	Leu Lys Lys Met Ser Glu Gln Asp Val Ala Glu Phe Ala Lys Thr				
3665		3670		3675	
cag ctg aca ctt cca gat aaa ata gat ccg gca gac gaa atg tct 11079	Gln Leu Thr Leu Pro Asp Lys Ile Asp Pro Ala Asp Glu Met Ser				
3680		3685		3690	
tgg caa cat tac ttg tat agc aag tta ggt tcg aag agt aag agc 11124	Trp Gln His Tyr Leu Tyr Ser Lys Leu Gly Ser Lys Ser Lys Ser				
3695		3700		3705	
aat ata act gtg gaa act gct gaa aat aaa gcc aag att att gat 11169	Asn Ile Thr Val Glu Thr Ala Glu Asn Lys Ala Lys Ile Ile Asp				
3710		3715		3720	
gat act gtt gaa agg atc gtc gct atg agt aaa gtg ctt ttc gga 11214	Asp Thr Val Glu Arg Ile Val Ala Met Ser Lys Val Leu Phe Gly				
3725		3730		3735	
ttg cat atg atc gac cat ccc caa caa atg agt aag aac gtg tac 11259	Leu His Met Ile Asp His Pro Gln Gln Met Ser Lys Asn Val Tyr				
3740		3745		3750	
cgg tcg gtg gtg tcc ata caa cgc aag cgc gcc gtc atc gcc tgc 11304	Arg Ser Val Val Ser Ile Gln Arg Lys Arg Ala Val Ile Ala Cys				
3755		3760		3765	
ttc cga caa act tcg cta cat tct ctg ccg aga cac cga gcg tgt 11349	Phe Arg Gln Thr Ser Leu His Ser Leu Pro Arg His Arg Ala Cys				
3770		3775		3780	
aac atc ttc gct cgc acg tac tac gag ctc tgg ttg gaa gag gag 11394	Asn Ile Phe Ala Arg Thr Tyr Tyr Glu Leu Trp Leu Glu Glu Glu				
3785		3790		3795	
aac att gga caa gaa gtt atg ata gaa gat ctt act caa tca ttc 11439	Asn Ile Gly Gln Glu Val Met Ile Glu Asp Leu Thr Gln Ser Phe				

3800	3805	3810	
gaa gac gca gaa ctg aag Glu Asp Ala Glu Leu Lys 3815	aag aag agt gac gtg gtg Lys Lys Ser Asp Val Val 3820	gag gaa ggt gag Glu Glu Gly Glu 3825	11484
aag ccc gac ccc ctc acg Lys Pro Asp Pro Leu Thr 3830	cag ctg gtc acc acc Gln Leu Val Thr Thr 3835	ttc tgt cgc ggc Phe Cys Arg Gly 3840	11529
gcc atg act gag agg tcc Ala Met Thr Glu Arg Ser 3845	ggc gct tta cag gag Gly Ala Leu Gln Glu 3850	gat ccc cta tac Asp Pro Leu Tyr 3855	11574
atg tct tac gca cac atc Met Ser Tyr Ala His Ile 3860	ata gcg aag tcc tgt Ile Ala Lys Ser Cys 3865	gga gaa gaa gag Gly Glu Glu Glu 3870	11619
gaa gaa ggg ggc ggg gaa Glu Glu Gly Gly Gly Glu 3875	gaa gag gaa ggg ggt Glu Glu Glu Gly Gly 3880	gga gaa gct gag Gly Glu Ala Glu 3885	11664
gcc gag gac gaa ggc aga Ala Glu Asp Glu Gly Arg 3890	gcc agt ata cac gaa Ala Ser Ile His Glu 3895	caa gag atg gag Gln Glu Met Glu 3900	11709
aaa cag aag ctt cta ttc Lys Gln Lys Leu Leu Phe 3905	cac caa gcg cga ctg His Gln Ala Arg Leu 3910	gca gac cgc ggt Ala Asp Arg Gly 3915	11754
gtt gcc gag atg gtg ttg Val Ala Glu Met Val Leu 3920	ctg cat atc tcc gcg Leu His Ile Ser Ala 3925	tct aaa ggc ctg Ser Lys Gly Leu 3930	11799
ccc agc gag atg gtc atg Pro Ser Glu Met Val Met 3935	aag aca tta cag ctc Lys Thr Leu Gln Leu 3940	ggt att agt ata Gly Ile Ser Ile 3945	11844
ctg aga gga ggc aat att Leu Arg Gly Gly Asn Ile 3950	gat ata cag atg ggt Asp Ile Gln Met Gly 3955	atg ttg aac cac Met Leu Asn His 3960	11889
ttg aaa gac aag aaa gac Leu Lys Asp Lys Lys Asp 3965	gtg gga ttc ttc acg Val Gly Phe Phe Thr 3970	tcc atc gcc ggc Ser Ile Ala Gly 3975	11934
ctc atg aac tcc tgc tca Leu Met Asn Ser Cys Ser 3980	gtg ctc gat ctt gac Val Leu Asp Leu Asp 3985	gcc ttc gag agg Ala Phe Glu Arg 3990	11979
aac acc aaa gct gaa ggt Asn Thr Lys Ala Glu Gly 3995	ctg ggc gtg ggt ctg Leu Gly Val Gly Leu 4000	gaa ggc gcc gca Glu Gly Ala Ala 4005	12024
gga gag aag aac atg cat Gly Glu Lys Asn Met His 4010	gac gcc gag ttc acc Asp Ala Glu Phe Thr 4015	tgc gca ctc ttt Cys Ala Leu Phe 4020	12069
agg ttc att cag ctc acc Arg Phe Ile Gln Leu Thr 4025	tgt gaa gga cac aac Cys Glu Gly His Asn 4030	ttg gac tgg cag Leu Asp Trp Gln 4035	12114

4025	4030	4035	
aac tac ctg cga act cag gcc	ggt aac acg acg aca	gtg aac gtg	12159
Asn Tyr Leu Arg Thr Gln Ala	Gly Asn Thr Thr Thr	Val Asn Val	
4040	4045	4050	
gtc atc tgc acc gtc gac tac	ctg ctg cgg ctg cag	gag tcc atc	12204
Val Ile Cys Thr Val Asp Tyr	Leu Leu Arg Leu Gln	Glu Ser Ile	
4055	4060	4065	
atg gac ttc tac tgg cac tac	tct agc aag gaa ctg	atc gac ccg	12249
Met Asp Phe Tyr Trp His Tyr	Ser Ser Lys Glu Leu	Ile Asp Pro	
4070	4075	4080	
gcc ggc aaa gcg aat ttc ttc	aag gcc att ggc gtg	gct tcc caa	12294
Ala Gly Lys Ala Asn Phe Phe	Lys Ala Ile Gly Val	Ala Ser Gln	
4085	4090	4095	
gta ttc aac acc ctc act gaa	gtc ata cag gga cct	tgt act cag	12339
Val Phe Asn Thr Leu Thr Glu	Val Ile Gln Gly Pro	Cys Thr Gln	
4100	4105	4110	
aac cag cag gct tta gct cac	tct agg tta tgg gac	gct gtc ggt	12384
Asn Gln Gln Ala Leu Ala His	Ser Arg Leu Trp Asp	Ala Val Gly	
4115	4120	4125	
ggt ttc ttg ttc cta ttc tcc	cac atg cag gac aag	ttg tcg aag	12429
Gly Phe Leu Phe Leu Phe Ser	His Met Gln Asp Lys	Leu Ser Lys	
4130	4135	4140	
cac tcg tcg cag gtg gac ctg	ctg aag gaa ctc ctc	aat ctg cag	12474
His Ser Ser Gln Val Asp Leu	Leu Lys Glu Leu Leu	Asn Leu Gln	
4145	4150	4155	
aag gac atg atc acc atg atg	ctg tcc atg ctt gaa	gga aat gtt	12519
Lys Asp Met Ile Thr Met Met	Leu Ser Met Leu Glu	Gly Asn Val	
4160	4165	4170	
gtt aat ggt aca atc ggc aag	caa atg gtg gac act	cta gta gaa	12564
Val Asn Gly Thr Ile Gly Lys	Gln Met Val Asp Thr	Leu Val Glu	
4175	4180	4185	
tcg gcc tcc aac gtg gaa ctg	atc ctg aaa tac ttc	gac atg ttc	12609
Ser Ala Ser Asn Val Glu Leu	Ile Leu Lys Tyr Phe	Asp Met Phe	
4190	4195	4200	
ctc aag ctg aag gac ctg act	tcc agc gcc agc ttc	caa gag ata	12654
Leu Lys Leu Lys Asp Leu Thr	Ser Ser Ala Ser Phe	Gln Glu Ile	
4205	4210	4215	
gat gcc aat aac gac ggc tgg	gtg ctg ccc aag gac	ttc aag gag	12699
Asp Ala Asn Asn Asp Gly Trp	Val Leu Pro Lys Asp	Phe Lys Glu	
4220	4225	4230	
aag atg gaa caa cag aag agt	tat act ccc gaa gaa	atc gag ttc	12744
Lys Met Glu Gln Gln Lys Ser	Tyr Thr Pro Glu Glu	Ile Glu Phe	
4235	4240	4245	
ctc tta gct tgc tgc gag acg	aac cac gac ggc aag	tta gac tac	12789
Leu Leu Ala Cys Cys Glu Thr	Asn His Asp Gly Lys	Leu Asp Tyr	

4250	4255	4260	
atc ggt ttc tgc gac cgt ttc Ile Gly Phe Cys Asp Arg Phe 4265	cac gag cct gcc aag His Glu Pro Ala Lys 4270	gag atc ggg Glu Ile Gly 4275	12834
ttt aac ttg gcc gtg tta ctg Phe Asn Leu Ala Val Leu Leu 4280	act aac ttg tct gaa Thr Asn Leu Ser Glu 4285	cat atg ccg His Met Pro 4290	12879
aac gag cct aga ttg gct cgt Asn Glu Pro Arg Leu Ala Arg 4295	ttc ctg gag acg gcg Phe Leu Glu Thr Ala 4300	ggg tca gtc Gly Ser Val 4305	12924
ctg aac tac ttc gaa cca ttc Leu Asn Tyr Phe Glu Pro Phe 4310	ctg ggc cgt atc gag Leu Gly Arg Ile Glu 4315	atc atg ggc Ile Met Gly 4320	12969
ggc tct aag cgc atc gag cga Gly Ser Lys Arg Ile Glu Arg 4325	gtc tac ttc gag atc Val Tyr Phe Glu Ile 4330	aag gag tct Lys Glu Ser 4335	13014
aat atc gaa cag tgg gag aaa Asn Ile Glu Gln Trp Glu Lys 4340	ccg caa att aag gaa Pro Gln Ile Lys Glu 4345	tcc aaa cgc Ser Lys Arg 4350	13059
gcg ttc ttc tac agc ata gta Ala Phe Phe Tyr Ser Ile Val 4355	aca gaa ggt ggt gat Thr Glu Gly Gly Asp 4360	aaa gag aaa Lys Glu Lys 4365	13104
tta gaa gct ttc gtg aac ttc Leu Glu Ala Phe Val Asn Phe 4370	tgt gag gac gcc atc Cys Glu Asp Ala Ile 4375	ttt gaa atg Phe Glu Met 4380	13149
acg cac gcg tcg gga cta atg Thr His Ala Ser Gly Leu Met 4385	gcg gcg tcg gag gag Ala Ala Ser Glu Glu 4390	tcg gtg gga Ser Val Gly 4395	13194
ggg acc aag aat aga gag gcc Gly Thr Lys Asn Arg Glu Ala 4400	agc tat atg tat atg Ser Tyr Met Tyr Met 4405	ggg gat gat Gly Asp Asp 4410	13239
gat gat gag aga gcc ggc aaa Asp Asp Glu Arg Ala Gly Lys 4415	gat cca ttc cgt cgc Asp Pro Phe Arg Arg 4420	gga ctc cag Gly Leu Gln 4425	13284
tca gtg aaa gac ggc gtc gcc Ser Val Lys Asp Gly Val Ala 4430	acg gca ttt tct tcc Thr Ala Phe Ser Ser 4435	tta tca cct Leu Ser Pro 4440	13329
tcc aac ata aag gcg aaa atc Ser Asn Ile Lys Ala Lys Ile 4445	gca gac atg caa caa Ala Asp Met Gln Gln 4450	atg cca cca Met Pro Pro 4455	13374
gcc gaa cta gca gtg ggc ttt Ala Glu Leu Ala Val Gly Phe 4460	ttc aaa atg ttc ttc Phe Lys Met Phe Phe 4465	tat cta ttc Tyr Leu Phe 4470	13419
tat tac ttg ggc tat gga gtt Tyr Tyr Leu Gly Tyr Gly Val 4480	ctc gtc gtt gtc agg Leu Val Val Val Arg 4485	tat ata ttc Tyr Ile Phe 4490	13464

4475						4480						4485				
ggt gtg ctc ttg ggt ctg atg cga ggt cct cag acg gat gaa ccg	Gly Val Leu Leu Gly Leu Met Arg Gly Pro Gln Thr Asp Glu Pro															13509
4490						4495						4500				
cct ccg gag ccg acg gaa gag gag aaa atc ggt cag ttg aga cac	Pro Pro Glu Pro Thr Glu Glu Glu Lys Ile Gly Gln Leu Arg His					4510						4515				13554
agg ttg cta gcg aca caa agt tct cgt cat ctc ccg gcg ttg cct	Arg Leu Leu Ala Thr Gln Ser Ser Arg His Leu Pro Ala Leu Pro					4525						4530				13599
4520						4525										
cca gct gat gat acg gga cag atg caa gtg tcg gca ttc gga ctc	Pro Ala Asp Asp Thr Gly Gln Met Gln Val Ser Ala Phe Gly Leu					4540						4545				13644
4535						4540										
gat atc acc aag gaa gac aat gga cag ata caa gta aag ccg cac	Asp Ile Thr Lys Glu Asp Asn Gly Gln Ile Gln Val Lys Pro His					4555						4560				13689
4550						4555										
gaa tca ccc agc aca tcc act cca tca tca ggc gag gag gcg gag	Glu Ser Pro Ser Thr Ser Thr Pro Ser Ser Gly Glu Glu Ala Glu					4570						4575				13734
4565						4570										
gtg tca ccc gac gag agc gcc gac cac acg gag gag cag aga ccg	Val Ser Pro Asp Glu Ser Ala Asp His Thr Glu Glu Gln Arg Pro					4585						4590				13779
4580						4585										
cct tct ctt atc gac ctg ctc ggt gga gaa caa gct aaa aag caa	Pro Ser Leu Ile Asp Leu Leu Gly Gly Glu Gln Ala Lys Lys Gln					4600						4605				13824
4595						4600										
gct cag gag agg atg gaa gct caa gct gct caa caa gct gct atg	Ala Gln Glu Arg Met Glu Ala Gln Ala Ala Gln Gln Ala Ala Met					4615						4620				13869
4610						4615										
tcc gcc att gaa gct gaa agc aaa aag gca gtg caa ggg ccc gcg	Ser Ala Ile Glu Ala Glu Ser Lys Lys Ala Val Gln Gly Pro Ala					4630						4635				13914
4625						4630										
cca tca gcg cta tct caa gtg gac ctg tcc cag tac acc cgg cgc	Pro Ser Ala Leu Ser Gln Val Asp Leu Ser Gln Tyr Thr Arg Arg					4645						4650				13959
4640						4645										
gca gtc tcg ttc cta gct cgc aac ttc tac aac ctg aag tac gtg	Ala Val Ser Phe Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val					4660						4665				14004
4655						4660										
gcg ctc gtg ctg gcc ttc tgt atc aac ttc gtg ctg ctc ttc tat	Ala Leu Val Leu Ala Phe Cys Ile Asn Phe Val Leu Leu Phe Tyr					4675						4680				14049
4670						4675										
aag gta tct acc ctg gac ggt gaa ggt ggt gaa ggt tcg ggt ctg	Lys Val Ser Thr Leu Asp Gly Glu Gly Gly Glu Gly Ser Gly Leu					4690						4695				14094
4685						4690										
ggt gat atc atc gcc ggt ggg ggt tcc gga tcc ggg gct ggc tct	Gly Asp Ile Ile Ala Gly Gly Gly Ser Gly Ser Gly Ala Gly Ser															14139

4700	4705	4710	
ggc agt gga gac ggt agt Gly Ser Gly Asp Gly Ser 4715	ggc gaa tca gga gaa gat Gly Glu Ser Gly Glu Asp 4720	gac gac gcg Asp Asp Ala 4725	14184
tta gaa gta gta cac ata Leu Glu Val Val His Ile 4730	gac gaa gac ttc ttc Asp Glu Asp Phe Phe 4735	tat atg gaa cac Tyr Met Glu His 4740	14229
gtc atc aaa atg gcg gcc Val Ile Lys Met Ala Ala 4745	gtg ttg cac tct atc Val Leu His Ser Ile 4750	gtg tct ctg gct Val Ser Leu Ala 4755	14274
ata ctc atc gga tat tat Ile Leu Ile Gly Tyr Tyr 4760	cat ctt aag gtg ccg His Leu Lys Val Pro 4765	cta gct atc ttc Leu Ala Ile Phe 4770	14319
aaa cgc gag aag gag atc Lys Arg Glu Lys Glu Ile 4775	gct cgt aaa ctg gaa ttc Ala Arg Lys Leu Glu Phe 4780	gac gga ctg Asp Gly Leu 4785	14364
tac atc gct gaa cag cct Tyr Ile Ala Glu Gln Pro 4790	gaa gac gac gac ctc Glu Asp Asp Asp Leu 4795	aag agc cac tgg Lys Ser His Trp 4800	14409
gac aaa ctc gtt ata tct Asp Lys Leu Val Ile Ser 4805	gcc aaa tca ttc ccc Ala Lys Ser Phe Pro 4810	gta aac tac tgg Val Asn Tyr Trp 4815	14454
gac aag ttc gtg aag aag Asp Lys Phe Val Lys Lys 4820	aaa gtt cgc gcc aaa Lys Val Arg Ala Lys 4825	tat tca gag aca Tyr Ser Glu Thr 4830	14499
tat gac ttc gac tcc atc Tyr Asp Phe Asp Ser Ile 4835	tcc aac atg ttg ggc Ser Asn Met Leu Gly 4840	atg gag aag act Met Glu Lys Thr 4845	14544
tcc ttc tcc gcg caa gaa Ser Phe Ser Ala Gln Glu 4850	gaa gaa ggc agc aaa Glu Glu Gly Ser Lys 4855	gga ctt att cat Gly Leu Ile His 4860	14589
tac ata atc aac ata gac Tyr Ile Ile Asn Ile Asp 4865	tgg cgc tac caa gtg Trp Arg Tyr Gln Val 4870	tgg aag gcg ggc Trp Lys Ala Gly 4875	14634
gtg acg atc aca gac aac Val Thr Ile Thr Asp Asn 4880	tcg ttc ctc tac tct Ser Phe Leu Tyr Ser 4885	cta tgg tac ttc Leu Trp Tyr Phe 4890	14679
tcc ttc tcc gtg atg ggg Ser Phe Ser Val Met Gly 4895	aac ttc aac aac ttc Asn Phe Asn Asn Phe 4900	ttc ttc gcc gca Phe Phe Ala Ala 4905	14724
cat ttg ttg gac gtg gct His Leu Leu Asp Val Ala 4910	gtt ggg ttt aag acc Val Gly Phe Lys Thr 4915	ctg agg act atc Leu Arg Thr Ile 4920	14769
ttg cag tct gtc acg cat Leu Gln Ser Val Thr His 4910	aat gga aaa cag ctg Asn Gly Lys Gln Leu 4915	gta tta acg gtg Val Leu Thr Val 4920	14814

4925	4930	4935	
atg ctg ctg act ata atc	gtg tac atc tac acg	gtg atc gcg ttc	14859
Met Leu Leu Thr Ile Ile	Val Tyr Ile Tyr Thr	Val Ile Ala Phe	
4940	4945	4950	
aac ttc ttc cgc aag ttc	tac gtg cag gag gag	gac gac gaa gtc	14904
Asn Phe Phe Arg Lys Phe	Tyr Val Gln Glu Glu	Asp Asp Glu Val	
4955	4960	4965	
aat agg aac tgc cat gat	atg ttg acg tgc ttc	gtg ttc aac ttg	14949
Asn Arg Asn Cys His Asp	Met Leu Thr Cys Phe	Val Phe Asn Leu	
4970	4975	4980	
tac aag ggc gtg cgg gcg	ggc ggc ggc atc ggc	gac gag ctg gag	14994
Tyr Lys Gly Val Arg Ala	Gly Gly Gly Ile Gly	Asp Glu Leu Glu	
4985	4990	4995	
ccg cct gat gga gac gac	tcc gag gtc tac cgc	atc atc ttc gac	15039
Pro Pro Asp Gly Asp Asp	Ser Glu Val Tyr Arg	Ile Ile Phe Asp	
5000	5005	5010	
atc tcc ttc ttc ttc ttc	atc atc gtc atc ctg	ctc gct atc ctg	15084
Ile Ser Phe Phe Phe Phe	Ile Ile Val Ile Leu	Leu Ala Ile Leu	
5015	5020	5025	
cag ggt ttg atc atc gac	gcg ttc gga gag ctg	cgt gac cag ttg	15129
Gln Gly Leu Ile Ile Asp	Ala Phe Gly Glu Leu	Arg Asp Gln Leu	
5030	5035	5040	
gag tcg gtg aag gag gac	atg gag tcc aac tgc	ttc atc tgc ggc	15174
Glu Ser Val Lys Glu Asp	Met Glu Ser Asn Cys	Phe Ile Cys Gly	
5045	5050	5055	
atc aat aaa gac tat ttt	gat aaa gtg ccg cac	ggg ttc gac aca	15219
Ile Asn Lys Asp Tyr Phe	Asp Lys Val Pro His	Gly Phe Asp Thr	
5060	5065	5070	
cac gtg cag agg gaa cat	aat cta gct aat tac	atg ttc ttc ctc	15264
His Val Gln Arg Glu His	Asn Leu Ala Asn Tyr	Met Phe Phe Leu	
5075	5080	5085	
atg cat ctc att aat aaa	ccc gat acg gaa tat	aca ggt caa gaa	15309
Met His Leu Ile Asn Lys	Pro Asp Thr Glu Tyr	Thr Gly Gln Glu	
5090	5095	5100	
acc tac gta tgg aac atg	tac aca caa aga tgt	tgg gac ttc ttc	15354
Thr Tyr Val Trp Asn Met	Tyr Thr Gln Arg Cys	Trp Asp Phe Phe	
5105	5110	5115	
ccc gtg gga gat tgt ttc	cga aag caa tac gaa	gac ctc atg gga	15399
Pro Val Gly Asp Cys Phe	Arg Lys Gln Tyr Glu	Asp Leu Met Gly	
5120	5125	5130	
gaa tag			15405
Glu			

<210> 130  
<211> 5134

<212> PRT  
<213> Heliothis virescens

<220>  
<223> pXL-Hv2

<400> 130  
Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe  
1 5 10 15  
Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
20 25 30  
Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
35 40 45  
Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
50 55 60  
Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
65 70 75 80  
Thr Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg  
85 90 95  
Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Leu Asn Ser Asp  
100 105 110  
Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Gln Asp Lys Pro Ala  
115 120 125  
Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly Glu Ala Cys Trp Trp  
130 135 140  
Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
145 150 155 160  
Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu  
165 170 175  
His Thr Thr Lys Glu Asn Glu Val Ser Ile Val Asn Ala Ser Phe His  
180 185 190  
Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met  
195 200 205  
Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His  
210 215 220  
Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Thr Lys Asp Gly  
225 230 235 240  
Gly Gln Asn Ile Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala  
245 250 255  
Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly  
260 265 270  
Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly  
275 280 285



Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu	Tyr	Leu	Val	Ser	Arg	290	295	300	
Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys	Leu	Arg	Gln	Glu	Lys	305	310	315	320
Asp	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	325	330	335	
Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	Ile	Val	Gln	His	Ser	340	345	350	
Glu	Thr	Gly	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Glu	355	360	365	
Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	370	375	380	
Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	385	390	395	400
Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Lys	Phe	405	410	415	
Ile	Asn	Gly	Leu	Glu	Thr	Leu	Gln	Glu	Asn	Arg	Arg	His	Ser	Met	Phe	420	425	430	
Phe	Ala	Ser	Val	Asn	Leu	Gly	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	435	440	445	
Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Asp	Glu	Asp	Met	Glu	His	Glu	Glu	Lys	450	455	460	
Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	465	470	475	480
Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Val	485	490	495	
Ile	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu	Ala	Gly	Asp	Glu	Ser	500	505	510	
Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	515	520	525	
Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	530	535	540	
Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Gly	545	550	555	560
Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	565	570	575	
Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	580	585	590	
Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	595	600	605	

Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	
610						615					620					
Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	
625					630					635					640	
Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	
				645					650					655		
Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Phe	Glu	Val	Thr	
			660					665					670			
Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Ile	Pro	His	Leu	Arg	Ile	
		675					680					685				
Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	
690						695					700					
Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Tyr	Gly	Phe	
705					710					715					720	
Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	Thr	Pro	Val	Asn	Arg	
				725					730					735		
Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Cys	
			740					745					750			
Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	Met	Phe	Asn	Gly	Val	
		755					760					765				
Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	Glu	Gly	Met	Phe	Phe	
		770				775					780					
Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Leu	Gly	
785					790					795					800	
Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro	Glu	Gly	Tyr	Ser	Pro	
				805				810						815		
Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Glu	Pro	Cys	
			820					825					830			
Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	Ala	Gly	Pro	Pro	Leu	
		835					840					845				
Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	Val	Asp	Thr	Leu	Gln	
		850				855					860					
Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	Asp	Lys	Leu	Ala	Glu	
865					870					875					880	
Asn	Ile	His	Glu	Met	Trp	Ala	Met	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Met	
				885					890					895		
Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His	Lys	Ile	His	Pro	Cys	Leu	Val	
			900					905					910			
Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ile	Gln	Leu	
		915					920					925				

Ala	Val	Gln	Thr	Leu	Lys	Thr	Ile	Leu	Ala	Leu	Gly	Tyr	Tyr	Ile	Ser	930	935	940	
Leu	Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Asn	Val	Arg	Leu	Pro	Asn	Glu	945	950	955	960
Pro	Phe	Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	965	970	975	
Ala	Val	Thr	Leu	Thr	Pro	Lys	Met	Asp	Glu	Leu	Val	Asp	Gln	Leu	Ala	980	985	990	
Glu	Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	995	1000	1005	
Thr	Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Asp	Met	His	Arg	Ser	Pro	His	1010	1015	1020		
Leu	Val	Pro	Tyr	Pro	Lys	Val	Asp	Asp	Ala	Ile	Lys	Lys	Ala	Asn	1025	1030	1035		
Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	1040	1045	1050		
Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln	His	Glu	Ala	Leu	Leu	1055	1060	1065		
Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp	Phe	Arg	Thr	Tyr	Arg	1070	1075	1080		
Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	1085	1090	1095		
Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	His	1100	1105	1110		
Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly	Gln	Asp	Glu	Asn	Ser	1115	1120	1125		
Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Val	Tyr	Ser	Gly	Asn	1130	1135	1140		
Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val	Gly	Asp	Val	Val	Gly	1145	1150	1155		
Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile	Ser	Phe	Ser	Leu	Asn	1160	1165	1170		
Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	1175	1180	1185		
Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val	1190	1195	1200		
Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	Asp	Val	Asn	Thr	Leu	1205	1210	1215		
Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe	1220	1225	1230		

Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met	Ile	Asp	Thr	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Asn	Glu	Phe
1295						1300					1305			
Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp	Val	Glu	Ile	Lys	Asp
1310						1315					1320			
Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	Glu	Ala	Gln	Met	Pro
1325						1330					1335			
Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly	Phe	Thr	Met	Asn	Asp
1340						1345					1350			
Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln	Glu	Glu	Leu	Pro	Ser
1355						1360					1365			
Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser
1370						1375					1380			
Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr	Asn	Asn	Leu	Gln	Pro
1385						1390					1395			
Gly	Gln	Val	Asn	Gly	Met	His	Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met
1400						1405					1410			
Ala	Lys	Tyr	Asp	Leu	Gly	Ala	Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys
1415						1420					1425			
Lys	Asp	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys
1430						1435					1440			
Arg	Gly	Glu	Ser	Ser	Asp	Arg	Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr
1445						1450					1455			
Pro	Asp	Pro	Phe	Ser	Asp	Thr	Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala
1460						1465					1470			
Arg	Arg	Pro	Asn	Pro	Gln	Ile	Lys	Val	Ser	Gln	Ala	Asn	Gln	Arg
1475						1480					1485			
Tyr	Asn	Gly	Met	Asn	Ala	Arg	Pro	Ser	Arg	Thr	Asn	Leu	Tyr	Gly
1490						1495					1500			
Ser	Gln	Val	Gly	Leu	Asn	Met	Ala	Thr	Pro	Thr	Gln	Asp	Arg	Lys
1505						1510					1515			
Gln	Met	Thr	Thr	Ser	Thr	Leu	Ala	Gln	Ser	Ala	Thr	Glu	Thr	Val
1520						1525					1530			

Gly	Asn	Glu	Ile	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu
1535						1540					1545			
Tyr	Phe	Tyr	Gly	Val	Arg	Ile	Tyr	Pro	Gly	Gln	Asp	Pro	Thr	His
1550						1555					1560			
Val	Tyr	Ile	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Lys
1565						1570					1575			
Asp	Phe	Asn	Gln	Ser	Lys	Val	Thr	Lys	Ser	Ser	Val	Ile	Ile	Thr
1580						1585					1590			
Asp	Asp	Tyr	Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys
1595						1600					1605			
Tyr	Met	Val	Arg	Ala	Asp	Glu	Leu	Tyr	Asn	Glu	Val	Met	Ala	Glu
1610						1615					1620			
Ala	Thr	Ala	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Ser
1625						1630					1635			
Val	Asp	Thr	Ser	Thr	Gly	Ser	Val	Ser	Phe	Thr	Cys	Glu	Gly	Lys
1640						1645					1650			
Asp	Thr	Ser	Phe	Lys	Phe	Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe
1655						1660					1665			
Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile
1670						1675					1680			
Glu	Leu	Gly	Arg	Ser	Ala	Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val
1685						1690					1695			
Leu	Pro	Thr	Ser	Asp	Lys	His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg
1700						1705					1710			
Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro
1715						1720					1725			
Asn	Gln	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Ile	Arg
1730						1735					1740			
Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu
1745						1750					1755			
His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile
1760						1765					1770			
Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu
1775						1780					1785			
Tyr	Ala	Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala
1790						1795					1800			
Leu	Cys	Thr	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Gln
1805						1810					1815			
Ser	Gln	Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu
1820						1825					1830			

Leu	Ile	Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Ala
1835						1840					1845			
Cys	Lys	Asn	Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala
1850						1855					1860			
Leu	Tyr	Glu	Glu	Pro	Asp	Met	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln
1865						1870					1875			
Thr	Glu	Ser	Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu
1880						1885					1890			
Ser	Ile	Thr	Glu	Ile	Ser	Asn	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu
1895						1900					1905			
Glu	Val	Val	Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val
1910						1915					1920			
Glu	Thr	Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Val	Gly	Gly	Ser	Asn
1925						1930					1935			
Glu	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu
1940						1945					1950			
Leu	Val	Gly	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile
1955						1960					1965			
Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	Glu	Gly
1970						1975					1980			
Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu
1985						1990					1995			
Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp
2000						2005					2010			
Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	Ala	His
2015						2020					2025			
Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr
2030						2035					2040			
Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys
2045						2050					2055			
Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile
2060						2065					2070			
Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro
2075						2080					2085			
Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr
2090						2095					2100			
Leu	Met	Ala	His	Val	Ser	Leu	His	Ala	Leu	Gln	Glu	Pro	Asp	Ala
2105						2110					2115			
Ala	Glu	Asn	Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys
2120						2125					2130			

Leu	Tyr	Asn	Ile	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Glu	Ala
2135						2140					2145			
Lys	Ala	Ile	Glu	Glu	Pro	Pro	Lys	Lys	Thr	Pro	Glu	Glu	Lys	Phe
2150						2155					2160			
Arg	Lys	Val	Leu	Ile	Gln	Thr	Ile	Val	Asn	Trp	Ala	Glu	Glu	Ser
2165						2170					2175			
Gln	Ile	Glu	Thr	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu
2180						2185					2190			
Val	Arg	Gln	Tyr	Asp	Ala	Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu
2195						2200					2205			
Lys	Thr	Tyr	Val	Ile	Asn	Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Gly
2210						2215					2220			
Met	Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln
2225						2230					2235			
Met	Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys
2240						2245					2250			
Leu	Val	Asn	Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg
2255						2260					2265			
Val	Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr
2270						2275					2280			
Leu	Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Gln	Pro	Ser	Ser
2285						2290					2295			
Gln	Pro	Val	Ala	Glu	Asp	Asn	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu
2300						2305					2310			
Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr
2315						2320					2325			
Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu
2330						2335					2340			
Leu	Glu	Asn	Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly
2345						2350					2355			
Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr
2360						2365					2370			
Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala
2375						2380					2385			
Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val
2390						2395					2400			
Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu
2405						2410					2415			
Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu
2420						2425					2430			

Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg
2435						2440					2445			
Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly
2450						2455					2460			
Leu	Leu	Lys	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile
2465						2470					2475			
Ala	Asp	Arg	Arg	Lys	Leu	Arg	Glu	Met	Glu	Gln	Glu	Gly	Asp	Val
2480						2485					2490			
Asn	Phe	Ser	His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu	Asp	Tyr
2495						2500					2505			
Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val
2510						2515					2520			
Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Gly	Val	Ile	Ala	Leu
2525						2530					2535			
Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu
2540						2545					2550			
Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr
2555						2560					2565			
Leu	Asn	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	Ser	Asp	Met
2570						2575					2580			
Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	Gly	Leu	Phe
2585						2590					2595			
Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	Phe	Tyr	Lys
2600						2605					2610			
Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala	Thr	Met
2615						2620					2625			
Leu	Asp	Arg	Asn	Asp	Gly	Cys	Glu	Ser	Asp	Met	Ala	Leu	Ser	Met
2630						2635					2640			
Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His
2645						2650					2655			
Ala	Tyr	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp
2660						2665					2670			
Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu
2675						2680					2685			
Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu
2690						2695					2700			
Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys
2705						2710					2715			
Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala
2720						2725					2730			



Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys	Tyr	Tyr
2735						2740					2745			
Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser	Ser	Asp
2750						2755					2760			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2765						2770					2775			
Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2780						2785					2790			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2795						2800					2805			
Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys	Glu	Gln
2810						2815					2820			
Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln	Pro	Ile
2825						2830					2835			
Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr	Ile	Val
2840						2845					2850			
Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys
2855						2860					2865			
Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp	Ser	Gln
2870						2875					2880			
Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr
2885						2890					2895			
Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala
2900						2905					2910			
Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile
2915						2920					2925			
Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly
2930						2935					2940			
Gly	Arg	Pro	Pro	Glu	Ile	Val	Gln	Thr	Asp	Ser	Ala	Thr	Pro	Phe
2945						2950					2955			
Asn	Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser
2960						2965					2970			
Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	His
2975						2980					2985			
Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly
2990						2995					3000			
Gly	Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp
3005						3010					3015			
Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys
3020						3025					3030			

Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys	Ala
3035						3040					3045			
Pro	Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu
3050						3055					3060			
Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile
3065						3070					3075			
Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr
3080						3085					3090			
Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys
3095						3100					3105			
Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser
3110						3115					3120			
Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn
3125						3130					3135			
Val	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	Leu
3140						3145					3150			
Phe	Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe
3155						3160					3165			
Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	Val
3170						3175					3180			
Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe
3185						3190					3195			
Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	Asp
3200						3205					3210			
Val	Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala	His
3215						3220					3225			
Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Ile
3230						3235					3240			
Asn	Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His	Leu
3245						3250					3255			
Ala	Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln
3260						3265					3270			
Val	Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly	Thr
3275						3280					3285			
Asp	Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile
3290						3295					3300			
Glu	Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser
3305						3310					3315			
Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His
3320						3325					3330			

Asn	Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu
3335						3340					3345			
Ala	Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	Leu
3350						3355					3360			
Glu	Ala	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys
3365						3370					3375			
Thr	Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro	Leu
3380						3385					3390			
Leu	Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp	Asn
3395						3400					3405			
Val	Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala	Glu
3410						3415					3420			
His	Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys	Lys
3425						3430					3435			
Asn	Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala	Thr
3440						3445					3450			
Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu	Arg
3455						3460					3465			
Asp	Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr	Asp
3470						3475					3480			
Asn	Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys	Ser
3485						3490					3495			
Ser	Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu	Asp
3500						3505					3510			
Trp	Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu
3515						3520					3525			
Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn	Asn
3530						3535					3540			
Val	Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile	Phe
3545						3550					3555			
Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn
3560						3565					3570			
Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met	Pro
3575						3580					3585			
Thr	Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro	Gln
3590						3595					3600			
Gly	Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg	Asp
3605						3610					3615			
Lys	Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys
3620						3625					3630			

Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln
3635						3640					3645			
Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Val	Gly	Thr
3650						3655					3660			
Leu	Lys	Lys	Met	Ser	Glu	Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr
3665						3670					3675			
Gln	Leu	Thr	Leu	Pro	Asp	Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser
3680						3685					3690			
Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser
3695						3700					3705			
Asn	Ile	Thr	Val	Glu	Thr	Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp
3710						3715					3720			
Asp	Thr	Val	Glu	Arg	Ile	Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly
3725						3730					3735			
Leu	His	Met	Ile	Asp	His	Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr
3740						3745					3750			
Arg	Ser	Val	Val	Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys
3755						3760					3765			
Phe	Arg	Gln	Thr	Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys
3770						3775					3780			
Asn	Ile	Phe	Ala	Arg	Thr	Tyr	Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu
3785						3790					3795			
Asn	Ile	Gly	Gln	Glu	Val	Met	Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe
3800						3805					3810			
Glu	Asp	Ala	Glu	Leu	Lys	Lys	Ser	Asp	Val	Val	Glu	Glu	Gly	Glu
3815						3820					3825			
Lys	Pro	Asp	Pro	Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly
3830						3835					3840			
Ala	Met	Thr	Glu	Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr
3845						3850					3855			
Met	Ser	Tyr	Ala	His	Ile	Ile	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu
3860						3865					3870			
Glu	Glu	Gly	Gly	Gly	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu
3875						3880					3885			
Ala	Glu	Asp	Glu	Gly	Arg	Ala	Ser	Ile	His	Glu	Gln	Glu	Met	Glu
3890						3895					3900			
Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly
3905						3910					3915			
Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Leu
3920						3925					3930			

Pro	Ser	Glu	Met	Val	Met	Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile
3935						3940					3945			
Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His
3950						3955					3960			
Leu	Lys	Asp	Lys	Lys	Asp	Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly
3965						3970					3975			
Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg
3980						3985					3990			
Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala
3995						4000					4005			
Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe
4010						4015					4020			
Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln
4025						4030					4035			
Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val
4040						4045					4050			
Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile
4055						4060					4065			
Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro
4070						4075					4080			
Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln
4085						4090					4095			
Val	Phe	Asn	Thr	Leu	Thr	Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln
4100						4105					4110			
Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly
4115						4120					4125			
Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys
4130						4135					4140			
His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln
4145						4150					4155			
Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val
4160						4165					4170			
Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu
4175						4180					4185			
Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe
4190						4195					4200			
Leu	Lys	Leu	Lys	Asp	Leu	Thr	Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile
4205						4210					4215			
Asp	Ala	Asn	Asn	Asp	Gly	Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu
4220						4225					4230			

Lys	Met	Glu	Gln	Gln	Lys	Ser	Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe
4235						4240					4245			
Leu	Leu	Ala	Cys	Cys	Glu	Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr
4250						4255					4260			
Ile	Gly	Phe	Cys	Asp	Arg	Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly
4265						4270					4275			
Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro
4280						4285					4290			
Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val
4295						4300					4305			
Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly
4310						4315					4320			
Gly	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser
4325						4330					4335			
Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg
4340						4345					4350			
Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys
4355						4360					4365			
Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met
4370						4375					4380			
Thr	His	Ala	Ser	Gly	Leu	Met	Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly
4385						4390					4395			
Gly	Thr	Lys	Asn	Arg	Glu	Ala	Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp
4400						4405					4410			
Asp	Asp	Glu	Arg	Ala	Gly	Lys	Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln
4415						4420					4425			
Ser	Val	Lys	Asp	Gly	Val	Ala	Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro
4430						4435					4440			
Ser	Asn	Ile	Lys	Ala	Lys	Ile	Ala	Asp	Met	Gln	Gln	Met	Pro	Pro
4445						4450					4455			
Ala	Glu	Leu	Ala	Val	Gly	Phe	Phe	Lys	Met	Phe	Phe	Tyr	Leu	Phe
4460						4465					4470			
Tyr	Tyr	Leu	Gly	Tyr	Gly	Val	Leu	Val	Val	Val	Arg	Tyr	Ile	Phe
4475						4480					4485			
Gly	Val	Leu	Leu	Gly	Leu	Met	Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro
4490						4495					4500			
Pro	Pro	Glu	Pro	Thr	Glu	Glu	Glu	Lys	Ile	Gly	Gln	Leu	Arg	His
4505						4510					4515			
Arg	Leu	Leu	Ala	Thr	Gln	Ser	Ser	Arg	His	Leu	Pro	Ala	Leu	Pro
4520						4525					4530			

Pro	Ala	Asp	Asp	Thr	Gly	Gln	Met	Gln	Val	Ser	Ala	Phe	Gly	Leu
4535						4540					4545			
Asp	Ile	Thr	Lys	Glu	Asp	Asn	Gly	Gln	Ile	Gln	Val	Lys	Pro	His
4550						4555					4560			
Glu	Ser	Pro	Ser	Thr	Ser	Thr	Pro	Ser	Ser	Gly	Glu	Glu	Ala	Glu
4565						4570					4575			
Val	Ser	Pro	Asp	Glu	Ser	Ala	Asp	His	Thr	Glu	Glu	Gln	Arg	Pro
4580						4585					4590			
Pro	Ser	Leu	Ile	Asp	Leu	Leu	Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln
4595						4600					4605			
Ala	Gln	Glu	Arg	Met	Glu	Ala	Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met
4610						4615					4620			
Ser	Ala	Ile	Glu	Ala	Glu	Ser	Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala
4625						4630					4635			
Pro	Ser	Ala	Leu	Ser	Gln	Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg
4640						4645					4650			
Ala	Val	Ser	Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val
4655						4660					4665			
Ala	Leu	Val	Leu	Ala	Phe	Cys	Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr
4670						4675					4680			
Lys	Val	Ser	Thr	Leu	Asp	Gly	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu
4685						4690					4695			
Gly	Asp	Ile	Ile	Ala	Gly	Gly	Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser
4700						4705					4710			
Gly	Ser	Gly	Asp	Gly	Ser	Gly	Glu	Ser	Gly	Glu	Asp	Asp	Asp	Ala
4715						4720					4725			
Leu	Glu	Val	Val	His	Ile	Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His
4730						4735					4740			
Val	Ile	Lys	Met	Ala	Ala	Val	Leu	His	Ser	Ile	Val	Ser	Leu	Ala
4745						4750					4755			
Ile	Leu	Ile	Gly	Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe
4760						4765					4770			
Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu
4775						4780					4785			
Tyr	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Leu	Lys	Ser	His	Trp
4790						4795					4800			
Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp
4805						4810					4815			
Asp	Lys	Phe	Val	Lys	Lys	Lys	Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr
4820						4825					4830			

Tyr	Asp	Phe	Asp	Ser	Ile	Ser	Asn	Met	Leu	Gly	Met	Glu	Lys	Thr
4835						4840					4845			
Ser	Phe	Ser	Ala	Gln	Glu	Glu	Glu	Gly	Ser	Lys	Gly	Leu	Ile	His
4850						4855					4860			
Tyr	Ile	Ile	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly
4865						4870					4875			
Val	Thr	Ile	Thr	Asp	Asn	Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe
4880						4885					4890			
Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala
4895						4900					4905			
His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile
4910						4915					4920			
Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val
4925						4930					4935			
Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe
4940						4945					4950			
Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Val	Gln	Glu	Glu	Asp	Asp	Glu	Val
4955						4960					4965			
Asn	Arg	Asn	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu
4970						4975					4980			
Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu
4985						4990					4995			
Pro	Pro	Asp	Gly	Asp	Asp	Ser	Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp
5000						5005					5010			
Ile	Ser	Phe	Phe	Phe	Phe	Ile	Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu
5015						5020					5025			
Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu
5030						5035					5040			
Glu	Ser	Val	Lys	Glu	Asp	Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly
5045						5050					5055			
Ile	Asn	Lys	Asp	Tyr	Phe	Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr
5060						5065					5070			
His	Val	Gln	Arg	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu
5075						5080					5085			
Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu
5090						5095					5100			
Thr	Tyr	Val	Trp	Asn	Met	Tyr	Thr	Gln	Arg	Cys	Trp	Asp	Phe	Phe
5105						5110					5115			
Pro	Val	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Leu	Met	Gly
5120						5125					5130			



Glu

<210> 131  
<211> 23  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer TC-1

<400> 131  
gatccgcggc cgcgatcggc acc 23

<210> 132  
<211> 14  
<212> DNA  
<213> artificial sequence

<220>  
<223> PCR primer TC-2

<400> 132  
cgatcgcggc cgcg 14

<210> 133  
<211> 110  
<212> DNA  
<213> artificial sequence

<220>  
<223> TC-3

<400> 133  
cctttttttt cagcgctata acttcgtata atgtatgcta tacgaagtta tccggcgcg 60  
caacggaccg cccaaataaa acgaaaggct cagtcgaaag actgggcctt 110

<210> 134  
<211> 110  
<212> DNA  
<213> artificial sequence

<220>  
<223> TC-4

<400> 134  
tcgtttttatc tgttggtttgt cggtgaacgc tctcctgagt aggacaaatc cgccgggagc 60  
ggatttgaac gttgcgaagc aacggcccgg aggggtggcgg gcaggacgcc 110

<210> 135  
<211> 108  
<212> DNA  
<213> artificial sequence

<220>  
 <223> TC-5

<400> 135  
 cgccataaac tgccaggcat caaattaagc agaaggccat cctgacggat ggccttttat 60  
 aacttcgtat aatgtatgct atacgaagtt atttaaactc tctctctc 108

<210> 136  
 <211> 102  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> TC-6

<400> 136  
 gagagagaga gtttaaataa cttcgtatag catacattat acgaagttat aaaaggccat 60  
 ccgtcaggat ggccttctgc ttaatttgat gcctggcagt tt 102

<210> 137  
 <211> 110  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> TC-7

<400> 137  
 atggcgggcg tcctgcccgc caccctccgg gccgttgctt cgcaacgttc aaatccgctc 60  
 ccggcggtatt tgcctactc aggagagcgt tcaccgacaa acaacagata 110

<210> 138  
 <211> 107  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> TC-8

<400> 138  
 aaacgaaagg ccagtccttt cgactgagcc tttcgtttta tttgggcggg ccgttggcgc 60  
 gccggataac ttcgtatagc atacattata cgaagttata gcgctga 107

<210> 139  
 <211> 18  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer TC-9

<400> 139  
 cctttttttt cagcgcta 18

<210> 140

```

<211> 18
<212> DNA
<213> artificial sequence

<220>
<223> PCR primer TC-10

<400> 140
gagagagagt ttaaataa 18

<210> 141
<211> 35
<212> DNA
<213> artificial sequence

<220>
<223> PCR primer1 Drosophila Ryr

<400> 141
accaccttaa ttaattccga tttggaggcg ctgcg 35

<210> 142
<211> 37
<212> DNA
<213> artificial sequence

<220>
<223> PCR primer2 Drosophila Ryr

<400> 142
gcctccgttt aaacgaccgt ccagtgccag tgtgaag 37

<210> 143
<211> 15429
<212> DNA
<213> Heliothis virescens

<220>
<221> CDS
<222> (1)..(15429)
<223>

<220>
<223> pXL-Hv3

<400> 143
atg gcg gaa gca gag ggg gga gca agc gag caa gat gat gtt tca ttc 48
Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe
1 5 10 15

ttg cgt acg gaa gac atg gtg tgc ctg tcg tgc aca gcg aca gga gag 96
Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu
20 25 30

agg gtg tgc ctg gct gcc gaa ggt ttc ggc aac cgg cac tgc ttc ctg 144
Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu
35 40 45

```

gag aat att gcc gac aag aac ata cca cct gat ctg tcg cag tgt gtg Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val 50 55 60	192
ttt gtc atc gaa cag gcg ctt tca gta aga gct tta cag gag ttg gta Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val 65 70 75 80	240
acg gct gcg ggt tct gaa act ggg aaa gaa aac tta ggt aaa ggt acc Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr 85 90 95	288
ggg tct ggt cat cgt acg cta cta tac ggc aat gct att ctt ttg cga Gly Ser Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg 100 105 110	336
cat ctt aac agt gat atg tac ctg gcc tgc ctg tcg aca tca tca tcc His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser 115 120 125	384
cag gat aag ctg gcc ttt gac gtg ggt ctg caa cag cac tcc cag ggt Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly 130 135 140	432
gaa gcc tgc tgg tgg acc ctg cat cct gcc agc aaa cag aga tcc gag Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu 145 150 155 160	480
ggg gag aag gtg cga gtc gga gat gac ttg att ctg gtc tcc gtg gct Gly Glu Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala 165 170 175	528
act gag aga tac ttg cac aca acg aaa gag aac gaa gta tcg ata gtg Thr Glu Arg Tyr Leu His Thr Thr Lys Glu Asn Glu Val Ser Ile Val 180 185 190	576
aac gcg tcg ttc cac gtg acc cac tgg tcg gta cag ccc tat ggt act Asn Ala Ser Phe His Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr 195 200 205	624
ggg ata tcg agg atg aag tat gta ggc tat gtg ttc gga ggt gat gtg Gly Ile Ser Arg Met Lys Tyr Val Val Gly Tyr Val Phe Gly Gly Asp Val 210 215 220	672
ctg cgg ttc ttc cat gga ggt gac gag tgt ctc act ata cct agt acc Leu Arg Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr 225 230 235 240	720
tgg aca aag gat ggg ggg caa aat atc gta gtc tac gaa gga ggt tca Trp Thr Lys Asp Gly Gly Gln Asn Ile Val Val Tyr Glu Gly Gly Ser 245 250 255	768
gtg atg tct caa gcc cgg tct tta tgg cgc ctg gag ctg gct aga acc Val Met Ser Gln Ala Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr 260 265 270	816
aag tgg gcc gga ggt ttc att aac tgg tac cac cct atg agg att cgg Lys Trp Ala Gly Gly Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg 275 280 285	864

cac atc act act gga aga tat ctc gga gta aac gac cag aat gag ctg	912
His Ile Thr Thr Gly Arg Tyr Leu Gly Val Asn Asp Gln Asn Glu Leu	
290 295 300	
tat tta gtt agc aga gag gaa gcc aca aca gct tcc tgt gcc ttc tgc	960
Tyr Leu Val Ser Arg Glu Glu Ala Thr Thr Ala Ser Cys Ala Phe Cys	
305 310 315 320	
ctg cgt cag gag aag ggt gat cag aaa caa gtg tta gaa gac aag gac	1008
Leu Arg Gln Glu Lys Gly Asp Gln Lys Gln Val Leu Glu Asp Lys Asp	
325 330 335	
ttg gag gtc ata ggc gcg ccc atc atc aag tac ggt gac tcc acc gtc	1056
Leu Glu Val Ile Gly Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val	
340 345 350	
att gtg cag cat tcc gag act ggc ttg tgg ctg tct tat aag tct tac	1104
Ile Val Gln His Ser Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr	
355 360 365	
gaa acg aag aag aag gga gtg ggt aaa gta gaa gag aag caa gcg att	1152
Glu Thr Lys Lys Lys Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile	
370 375 380	
ctc cac gag gaa ggc aag atg gac gac ggc ctc gac ttc tcc agg tca	1200
Leu His Glu Glu Gly Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser	
385 390 395 400	
cag gag gaa gaa tct agg act gct cga gtt atc aga aag tgt tct tcg	1248
Gln Glu Glu Glu Ser Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser	
405 410 415	
ctg ttc act aag ttt atc aat ggt ctg gaa act cta caa gag aac cgt	1296
Leu Phe Thr Lys Phe Ile Asn Gly Leu Glu Thr Leu Gln Glu Asn Arg	
420 425 430	
cgt cac tcg atg ttc ttc gcg tca gtg aac ctg ggc gag atg gtg atg	1344
Arg His Ser Met Phe Phe Ala Ser Val Asn Leu Gly Glu Met Val Met	
435 440 445	
tgc ctc gag gat ctc atc aac tac ttc gca caa ccc gat gaa gat atg	1392
Cys Leu Glu Asp Leu Ile Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met	
450 455 460	
gaa cac gaa gaa aag caa aac aaa ttc cgc gcc ctc cgc aac cgt cag	1440
Glu His Glu Glu Lys Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln	
465 470 475 480	
gac ctg ttc caa gag gaa ggc ata ctg aac ctg atc ctc gaa gct ata	1488
Asp Leu Phe Gln Glu Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile	
485 490 495	
gtc aag atc aac gtc atc acg tct cag ggg ttc ctg gct ggt ttc ctg	1536
Val Lys Ile Asn Val Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu	
500 505 510	
gcg gga gac gaa tct gga cag agc tgg gaa atg ata tct gga tat ttg	1584
Ala Gly Asp Glu Ser Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu	
515 520 525	

tat	cag	ttg	ttg	gcg	gca	ata	ata	aag	ggc	aac	cac	acg	aac	tgc	gcg	1632
Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	
530						535					540					
cag	ttc	gcg	aac	tcg	aac	cgg	ctg	aac	tgg	ctg	ttc	tcg	cgc	ctc	ggc	1680
Gln	Phe	Ala	Asn	Ser	Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	
545					550					555					560	
tcg	cag	gcc	tcg	ggc	gag	ggc	act	ggc	atg	ctc	gac	gtg	ctg	cac	tgc	1728
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	
				565					570					575		
gtg	ctc	atc	gac	tcg	cct	gaa	gcg	ttg	aat	atg	atg	agg	gac	gaa	cac	1776
Val	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	
			580					585					590			
ata	aaa	gtg	ata	atc	tct	cta	tta	gaa	aag	cac	ggg	cgc	gac	cct	aaa	1824
Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	
		595					600					605				
gta	cta	gat	gtg	tta	tgt	tca	ctc	tgc	gtc	ggc	aac	ggc	gtc	gcg	gtg	1872
Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	
		610				615					620					
cgc	tcg	tca	cag	aac	aac	atc	tgt	gac	tat	ttg	ctg	ccc	ggc	aag	aac	1920
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	
625					630					635					640	
ctg	ttg	ctg	caa	act	gcg	ctt	gta	gat	cac	gta	tct	agt	gtc	cgt	ccg	1968
Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	
				645					650					655		
aac	atc	ttc	gtg	ggc	cga	gta	gaa	ggc	tcg	gca	gtg	tac	cgc	aaa	tgg	2016
Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	
			660					665					670			
tac	ttc	gaa	gtg	act	atg	gac	cac	ata	gag	aag	acc	aca	cat	atg	atg	2064
Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met	
		675					680						685			
cca	cat	cta	cgc	ata	gga	tgg	gct	aac	act	act	ggc	tac	gtc	cca	tac	2112
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	
		690				695					700					
ccg	ggc	ggc	ggc	gaa	aag	tgg	gga	ggc	aac	ggc	gtg	gga	gac	gac	ctg	2160
Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	
705					710					715					720	
tac	tcg	tac	ggg	ttc	gac	ggc	gcc	tac	ctc	tgg	tcc	ggc	ggg	agg	aaa	2208
Tyr	Ser	Tyr	Gly	Phe	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	
				725					730					735		
act	ccc	gtc	aat	agg	act	cat	gct	gaa	gag	cct	tat	att	agg	aaa	ggc	2256
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	
			740					745					750			
gac	gtg	ata	ggc	tgt	gcg	tta	gac	ctg	acg	gta	ccc	atc	atc	aac	ttc	2304
Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	
		755					760						765			

atg ttc aac gga gtg cgg gtg acg gga tcc ttc acc aac ttc aat ctg Met Phe Asn Gly Val Arg Val Thr Gly Ser Phe Thr Asn Phe Asn Leu 770 775 780	2352
gaa ggc atg ttc ttc ccg gtc atc agc tgc tct agt aaa ttg agt tgc Glu Gly Met Phe Phe Pro Val Ile Ser Cys Ser Ser Lys Leu Ser Cys 785 790 795 800	2400
cgg ttc ctg ctg ggc ggg gaa cat ggt aga ctc cgg cac gcg gct cca Arg Phe Leu Leu Gly Gly Glu His Gly Arg Leu Arg His Ala Ala Pro 805 810 815	2448
gaa ggc tac tcc ccg ctg gtg gag tct ctc ctg ccg cag cag atc ctc Glu Gly Tyr Ser Pro Leu Val Glu Ser Leu Leu Pro Gln Gln Ile Leu 820 825 830	2496
agc ctg gag cct tgc ttc tac ttc ggc aac ctg tcc aag cgc gcc ctg Ser Leu Glu Pro Cys Phe Tyr Phe Gly Asn Leu Ser Lys Arg Ala Leu 835 840 845	2544
gct gga ccc ccg cta gta cag gac gat acg gct ttt gtg cct aca cct Ala Gly Pro Pro Leu Val Gln Asp Asp Thr Ala Phe Val Pro Thr Pro 850 855 860	2592
gtt gac act tta cag att act ctg cct aca tat gtg gaa caa atc aga Val Asp Thr Leu Gln Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg 865 870 875 880	2640
gac aag cta gct gaa aat ata cac gaa atg tgg gct atg aat aag atc Asp Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Met Asn Lys Ile 885 890 895	2688
gaa gca ggc tgg atg tac ggc gat cag aga gaa gac ttg cac aag atc Glu Ala Gly Trp Met Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile 900 905 910	2736
cac ccc tgc ctc gtg ccc ttc gag cgt ctc ccg ccc gct gag aaa cga His Pro Cys Leu Val Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg 915 920 925	2784
tac gac ata caa ctc gct gtg cag aca ctc aag aca atc ctg gct ctg Tyr Asp Ile Gln Leu Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu 930 935 940	2832
ggc tac tac atc agc tta gat aag cct cca gca cgc atc cgc aac gtt Gly Tyr Tyr Ile Ser Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val 945 950 955 960	2880
cgt ctg ccc aac gaa cct ttc atg cag tcc aac ggc tac aag cca gca Arg Leu Pro Asn Glu Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala 965 970 975	2928
cca ctc gac ctg ggt gct gtc acc ctg aca ccc aag atg gat gag cta Pro Leu Asp Leu Gly Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu 980 985 990	2976
gta gac cag ctg gct gag aac acc cac aac ctt tgg gcc agg gag agg Val Asp Gln Leu Ala Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg 995 1000 1005	3024

ata cag cag gga tgg act tac gga ctt aat gag gac tcg gac atg	3069
Ile Gln Gln Gly Trp Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met	
1010 1015 1020	
cat cga tcc ccg cac ctg gtg cca tac ccg aag gtt gac gat gcc	3114
His Arg Ser Pro His Leu Val Pro Tyr Pro Lys Val Asp Asp Ala	
1025 1030 1035	
atc aag aag gcc aac agg gac aca gcc tcg gag act gtg agg acc	3159
Ile Lys Lys Ala Asn Arg Asp Thr Ala Ser Glu Thr Val Arg Thr	
1040 1045 1050	
ctg ctg gtc tac ggg tat atg ctg gac ccg cct act ggg gag cag	3204
Leu Leu Val Tyr Gly Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln	
1055 1060 1065	
cat gaa gca ctc ttg ttg gaa gcg tca aaa cag aag caa gcc gac	3249
His Glu Ala Leu Leu Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp	
1070 1075 1080	
ttc aga aca tac cgc gct gag aag aac tat gcc gtc agc tct ggg	3294
Phe Arg Thr Tyr Arg Ala Glu Lys Asn Tyr Ala Val Ser Ser Gly	
1085 1090 1095	
aag tgg tac ttc gag ttt gag atc cta acg gct gga cct atg agg	3339
Lys Trp Tyr Phe Glu Phe Glu Ile Leu Thr Ala Gly Pro Met Arg	
1100 1105 1110	
gtc ggc tgg gct cac gct gat atg gca cca gga atg atg ctc gga	3384
Val Gly Trp Ala His Ala Asp Met Ala Pro Gly Met Met Leu Gly	
1115 1120 1125	
caa gac gag aac tcc tgg gca ttt gat ggt tac aat gag gaa aaa	3429
Gln Asp Glu Asn Ser Trp Ala Phe Asp Gly Tyr Asn Glu Glu Lys	
1130 1135 1140	
gtg tac agc ggt aac act gag tct ttc ggc aag caa tgg gct gtt	3474
Val Tyr Ser Gly Asn Thr Glu Ser Phe Gly Lys Gln Trp Ala Val	
1145 1150 1155	
ggt gac gta gtg ggg gtg ttc cta gat ctc att gat aag acg ata	3519
Gly Asp Val Val Gly Val Phe Leu Asp Leu Ile Asp Lys Thr Ile	
1160 1165 1170	
agt ttc tca ctc aac ggt gag tta ttg atg gat gct ctt ggc gga	3564
Ser Phe Ser Leu Asn Gly Glu Leu Leu Met Asp Ala Leu Gly Gly	
1175 1180 1185	
gag act acg ttt gct gat gtc cag ggt gac aac ttt gta cct gct	3609
Glu Thr Thr Phe Ala Asp Val Gln Gly Asp Asn Phe Val Pro Ala	
1190 1195 1200	
tgc acg ctt ggt gtc ggc caa aaa gcc agg tta aca tac ggt cag	3654
Cys Thr Leu Gly Val Gly Gln Lys Ala Arg Leu Thr Tyr Gly Gln	
1205 1210 1215	
gac gtg aac acg ctg aaa tac ttc aca aca tgt ggt ctg cag gag	3699
Asp Val Asn Thr Leu Lys Tyr Phe Thr Thr Cys Gly Leu Gln Glu	
1220 1225 1230	



gga tat gaa cca ttc tgt gtc aat atg gag aga gac gtg act cac	3744
Gly Tyr Glu Pro Phe Cys Val Asn Met Glu Arg Asp Val Thr His	
1235 1240 1245	
tggtac acc aaa gac cag ccg atc ttc gag aat acg gat gag atg	3789
Trp Tyr Thr Lys Asp Gln Pro Ile Phe Glu Asn Thr Asp Glu Met	
1250 1255 1260	
atc gac acc aga ata gat gtg acc agg ata cca gct ggt tca gat	3834
Ile Asp Thr Arg Ile Asp Val Thr Arg Ile Pro Ala Gly Ser Asp	
1265 1270 1275	
aca cct cca tgc ctc aag att tcc cac aac acg ttt gag acg atg	3879
Thr Pro Pro Cys Leu Lys Ile Ser His Asn Thr Phe Glu Thr Met	
1280 1285 1290	
gag aaa gct aac tgg gag ttc tta cgt ctc tca ctg cct gtc atc	3924
Glu Lys Ala Asn Trp Glu Phe Leu Arg Leu Ser Leu Pro Val Ile	
1295 1300 1305	
tgc cat aac gag ttc att gac gag gca gaa aaa gcc agg cgt tgg	3969
Cys His Asn Glu Phe Ile Asp Glu Ala Glu Lys Ala Arg Arg Trp	
1310 1315 1320	
gta gaa atc aag gac cgc caa cag atc cta atg aaa gag gca gtt	4014
Val Glu Ile Lys Asp Arg Gln Gln Ile Leu Met Lys Glu Ala Val	
1325 1330 1335	
gaa gct cag atg ccc gcc cat att gac cag atc atg agg agc ggt	4059
Glu Ala Gln Met Pro Ala His Ile Asp Gln Ile Met Arg Ser Gly	
1340 1345 1350	
ttc acc atg aac gat att aaa ggt ttg cac tac gaa gac aat cag	4104
Phe Thr Met Asn Asp Ile Lys Gly Leu His Tyr Glu Asp Asn Gln	
1355 1360 1365	
gaa gag ttg ccc agc tcc aag atg aag cgc ctg cct tca agg cca	4149
Glu Glu Leu Pro Ser Ser Lys Met Lys Arg Leu Pro Ser Arg Pro	
1370 1375 1380	
cca cgt aag gga tcc atg aca aga ggt gtt act ata caa aat tac	4194
Pro Arg Lys Gly Ser Met Thr Arg Gly Val Thr Ile Gln Asn Tyr	
1385 1390 1395	
aat aat ttg caa cca ggt caa gtc aat ggc atg cac cgg tcg acc	4239
Asn Asn Leu Gln Pro Gly Gln Val Asn Gly Met His Arg Ser Thr	
1400 1405 1410	
agt gaa gct gaa atg gcc aag tat gac ttg gga gcg caa ggt ttg	4284
Ser Glu Ala Glu Met Ala Lys Tyr Asp Leu Gly Ala Gln Gly Leu	
1415 1420 1425	
acg cct gat gat aag aag gac aag agg gga cga tcg cct ttc aag	4329
Thr Pro Asp Asp Lys Lys Asp Lys Arg Gly Arg Ser Pro Phe Lys	
1430 1435 1440	
ttc ttc aga agc aag cgc ggc gaa agc agt gat cgt gcc aaa tcc	4374
Phe Phe Arg Ser Lys Arg Gly Glu Ser Ser Asp Arg Ala Lys Ser	
1445 1450 1455	

cgt aaa tcc aaa act cca gat	ccc ttc agc gat acc	gag gta tca	4419
Arg Lys Ser Lys Thr Pro Asp	Pro Phe Ser Asp Thr	Glu Val Ser	
1460	1465	1470	
cca gaa cgt ggt gct cga agg	cct aac cct cag atc	aaa gtg tca	4464
Pro Glu Arg Gly Ala Arg Arg	Pro Asn Pro Gln Ile	Lys Val Ser	
1475	1480	1485	
cag gcc aat caa aga tat aac	ggc atg aac gcg cgt	cct agc agg	4509
Gln Ala Asn Gln Arg Tyr Asn	Gly Met Asn Ala Arg	Pro Ser Arg	
1490	1495	1500	
acc aac ttg tat ggg agc caa	gtt ggt tta aac tca	aac gct cag	4554
Thr Asn Leu Tyr Gly Ser Gln	Val Gly Leu Asn Ser	Asn Ala Gln	
1505	1510	1515	
atg gcg acg ccc acg caa gac	agg aag cag atg acg	acg agc act	4599
Met Ala Thr Pro Thr Gln Asp	Arg Lys Gln Met Thr	Thr Ser Thr	
1520	1525	1530	
ctc gcg cag tcg gct acg gaa	act gtc ggc aat gag	atc ttc gat	4644
Leu Ala Gln Ser Ala Thr Glu	Thr Val Gly Asn Glu	Ile Phe Asp	
1535	1540	1545	
gca gag tgc ttg aag ctc atc	aat gag tac ttt tat	gga gtc agg	4689
Ala Glu Cys Leu Lys Leu Ile	Asn Glu Tyr Phe Tyr	Gly Val Arg	
1550	1555	1560	
atc tac cca ggt cag gac cca	aca cac gtg tac atc	ggc tgg gtg	4734
Ile Tyr Pro Gly Gln Asp Pro	Thr His Val Tyr Ile	Gly Trp Val	
1565	1570	1575	
acc acc cag tac cac ttg cac	tct aag gac ttc aac	cag agc aag	4779
Thr Thr Gln Tyr His Leu His	Ser Lys Asp Phe Asn	Gln Ser Lys	
1580	1585	1590	
gtc acc aag tcc tct gtc atc	atc act gat gat tac	gat agg gtt	4824
Val Thr Lys Ser Ser Val Ile	Ile Thr Asp Asp Tyr	Asp Arg Val	
1595	1600	1605	
gtt gag aac gta aac cgg cag	tcc tgc tac atg gtg	cga gct gac	4869
Val Glu Asn Val Asn Arg Gln	Ser Cys Tyr Met Val	Arg Ala Asp	
1610	1615	1620	
gag cta tac aac gag gtg atg	gcg gaa gcc acg gcc	aag ggc gcc	4914
Glu Leu Tyr Asn Glu Val Met	Ala Glu Ala Thr Ala	Lys Gly Ala	
1625	1630	1635	
tcg cag ggc atg ttc atc ggc	tgc tcc gtc gac acc	tcc acc ggc	4959
Ser Gln Gly Met Phe Ile Gly	Cys Ser Val Asp Thr	Ser Thr Gly	
1640	1645	1650	
agc gtg tcc ttc acc tgc gag	ggg aag gac acc agc	ttc aag ttc	5004
Ser Val Ser Phe Thr Cys Glu	Gly Lys Asp Thr Ser	Phe Lys Phe	
1655	1660	1665	
aag atg gaa cca gaa aca aaa	ctg ttc ccc gcg atc	ttc gta gaa	5049
Lys Met Glu Pro Glu Thr Lys	Leu Phe Pro Ala Ile	Phe Val Glu	
1670	1675	1680	

gcg acc tcc aag gag atc ctg cag ata gag ctg ggc aga tca gcc Ala Thr Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg Ser Ala 1685 1690 1695	5094
acc agc ctt cca cta tca gcc gct gta cta cca acg agt gat aag Thr Ser Leu Pro Leu Ser Ala Ala Val Leu Pro Thr Ser Asp Lys 1700 1705 1710	5139
cat gtc ata cca cag ttc cca ccg agg ttg aag gtg cag tgc ttg His Val Ile Pro Gln Phe Pro Pro Arg Leu Lys Val Gln Cys Leu 1715 1720 1725	5184
aaa cca cat cag tgg gct agg gta ccg aac caa tcc cta caa gtc Lys Pro His Gln Trp Ala Arg Val Pro Asn Gln Ser Leu Gln Val 1730 1735 1740	5229
cac gct ctg aag ttg tcc gac atc cgc ggt tgg tcg atg ctg tgt His Ala Leu Lys Leu Ser Asp Ile Arg Gly Trp Ser Met Leu Cys 1745 1750 1755	5274
gaa gac gca gtg tct atg ctg gct ttg cac ata ccg gag gaa gat Glu Asp Ala Val Ser Met Leu Ala Leu His Ile Pro Glu Glu Asp 1760 1765 1770	5319
cgt tgc atg gac att ttg gag ctg ata gaa atg gac aaa ctt tta Arg Cys Met Asp Ile Leu Glu Leu Ile Glu Met Asp Lys Leu Leu 1775 1780 1785	5364
agt ttc cat tct cac acc ctc acg tta tac gct gct tta tgt tac Ser Phe His Ser His Thr Leu Thr Leu Tyr Ala Ala Leu Cys Tyr 1790 1795 1800	5409
cag agt aac tac agg gct gcc cac gct ctg tgc acg cac gtg gac Gln Ser Asn Tyr Arg Ala Ala His Ala Leu Cys Thr His Val Asp 1805 1810 1815	5454
cag aag cag ctg ctg tac gcg atc cag tcg cag tac atg tcg ggc Gln Lys Gln Leu Leu Tyr Ala Ile Gln Ser Gln Tyr Met Ser Gly 1820 1825 1830	5499
ccg ctg cgc caa ggc ttc tac gat ctt ctc ata gcg ctg cat ctc Pro Leu Arg Gln Gly Phe Tyr Asp Leu Leu Ile Ala Leu His Leu 1835 1840 1845	5544
gag tcg cat gcc acc acc atg gag gcg tgt aag aac gag ttc gtg Glu Ser His Ala Thr Thr Met Glu Ala Cys Lys Asn Glu Phe Val 1850 1855 1860	5589
atc ccg ctg ggc ccg gag ctg aag gcg ctg tac gag gag ccc gac Ile Pro Leu Gly Pro Glu Leu Lys Ala Leu Tyr Glu Glu Pro Asp 1865 1870 1875	5634
atg gga cac tcg ctg cgc tcg ctg cag acc gag agc gtg cgg ccg Met Gly His Ser Leu Arg Ser Leu Gln Thr Glu Ser Val Arg Pro 1880 1885 1890	5679
cag atg aag atg acc gat atc gct gaa agt ata acc gag atc agc Gln Met Lys Met Thr Asp Ile Ala Glu Ser Ile Thr Glu Ile Ser 1895 1900 1905	5724

aac cta tac tcg ccg tac ttc	ccg ctg gag gtg gtg	cgc gag ttc	5769
Asn Leu Tyr Ser Pro Tyr Phe	Pro Leu Glu Val Val	Arg Glu Phe	
1910	1915	1920	
gtg atg cag gcg ctg gct gaa	gcc gtg gag acc aac	cag gtg cac	5814
Val Met Gln Ala Leu Ala Glu	Ala Val Glu Thr Asn	Gln Val His	
1925	1930	1935	
aac cgg gat cct gtc ggg ggg	agc aat gag aac ctg	ttc ctg cct	5859
Asn Arg Asp Pro Val Gly Gly	Ser Asn Glu Asn Leu	Phe Leu Pro	
1940	1945	1950	
cta ata aag ctg gtg gac cgt	ctt cta cta gtc ggc	atg atg cgc	5904
Leu Ile Lys Leu Val Asp Arg	Leu Leu Leu Val Gly	Met Met Arg	
1955	1960	1965	
gac gag gat gtg gag aag cta	ctc atc atg acc aac	cct gag acg	5949
Asp Glu Asp Val Glu Lys Leu	Leu Ile Met Thr Asn	Pro Glu Thr	
1970	1975	1980	
tgg gac ccc tcg ttt gat aaa	ggg ggt aaa gac gag	cac cgc aaa	5994
Trp Asp Pro Ser Phe Asp Lys	Gly Gly Lys Asp Glu	His Arg Lys	
1985	1990	1995	
ggt cta ctc cac atg aaa atg	gcg gaa ggc gct aag	ctg cag atg	6039
Gly Leu Leu His Met Lys Met	Ala Glu Gly Ala Lys	Leu Gln Met	
2000	2005	2010	
tgt tac tta ctg caa cat ctc	aac gac ata cag ctg	cgg cac agg	6084
Cys Tyr Leu Leu Gln His Leu	Asn Asp Ile Gln Leu	Arg His Arg	
2015	2020	2025	
gtc gaa gct atc att gcg ttt	gcg cat gac ttc gtc	ggg gat cta	6129
Val Glu Ala Ile Ile Ala Phe	Ala His Asp Phe Val	Gly Asp Leu	
2030	2035	2040	
cag act gat cag ctc aga cgt	tac acg gaa atc aag	cag tcg gac	6174
Gln Thr Asp Gln Leu Arg Arg	Tyr Thr Glu Ile Lys	Gln Ser Asp	
2045	2050	2055	
ttg ccg agc gcg gtg gcc gct	aag aag acc agg gag	ttc cgg tgt	6219
Leu Pro Ser Ala Val Ala Ala	Lys Lys Thr Arg Glu	Phe Arg Cys	
2060	2065	2070	
ccg cct aga gaa cag atg aac	gct ata ttg agt ttc	aag cac tta	6264
Pro Pro Arg Glu Gln Met Asn	Ala Ile Leu Ser Phe	Lys His Leu	
2075	2080	2085	
gag gag gag gac aag gag aac	tgt ccg tgc ggc gag	gag ctg atc	6309
Glu Glu Glu Asp Lys Glu Asn	Cys Pro Cys Gly Glu	Glu Leu Ile	
2090	2095	2100	
gcg cgc atg aac gag ttc cac	gac acc ctc atg gcg	cac gtc tcg	6354
Ala Arg Met Asn Glu Phe His	Asp Thr Leu Met Ala	His Val Ser	
2105	2110	2115	
ctg cac gcg ctg cag gag ccc	gat gcc gcg gaa aat	caa gaa cct	6399
Leu His Ala Leu Gln Glu Pro	Asp Ala Ala Glu Asn	Gln Glu Pro	
2120	2125	2130	

gaa gca	aaa ccg	ggg gca	ttc	ggc aag	cta tac	aac	att atc	aat	6444
Glu Ala	Lys Pro	Gly Ala	Phe	Gly Lys	Leu Tyr	Asn	Ile Ile	Asn	
2135			2140			2145			
acg gtc	aag gaa	tta gaa	gag	gaa gct	aag gca	ata	gaa gag	cct	6489
Thr Val	Lys Glu	Leu Glu	Glu	Glu Ala	Lys Ala	Ile	Glu Glu	Pro	
2150			2155			2160			
ccg aag	aag acg	cct gag	gag	aag ttc	cgt aag	gtc	ctc atc	cag	6534
Pro Lys	Lys Thr	Pro Glu	Glu	Lys Phe	Arg Lys	Val	Leu Ile	Gln	
2165			2170			2175			
acc ata	gtg aac	tgg gct	gag	gag tcg	cag ata	gaa	aca ccc	aaa	6579
Thr Ile	Val Asn	Trp Ala	Glu	Glu Ser	Gln Ile	Glu	Thr Pro	Lys	
2180			2185			2190			
ctc gtc	aga gaa	atg ttc	agc	ctt ctt	gtc cgc	cag	tac gac	gca	6624
Leu Val	Arg Glu	Met Phe	Ser	Leu Leu	Val Arg	Gln	Tyr Asp	Ala	
2195			2200			2205			
gta ggc	gag ctg	atc cgc	gct	tta gag	aag aca	tac	gtc atc	aac	6669
Val Gly	Glu Leu	Ile Arg	Ala	Leu Glu	Lys Thr	Tyr	Val Ile	Asn	
2210			2215			2220			
gct aag	acc aag	ttg gat	gtc	gcg gag	atg tgg	gtg	ggg ctc	agc	6714
Ala Lys	Thr Lys	Leu Asp	Val	Ala Glu	Met Trp	Val	Gly Leu	Ser	
2225			2230			2235			
cag atc	cga gcc	ctc ctg	ccg	gtg cag	atg agc	cag	gag gaa	gag	6759
Gln Ile	Arg Ala	Leu Leu	Pro	Val Gln	Met Ser	Gln	Glu Glu	Glu	
2240			2245			2250			
gaa ctc	atg agg	aag agg	ctc	tgg aaa	ctt gtg	aac	aac cac	acg	6804
Glu Leu	Met Arg	Lys Arg	Leu	Trp Lys	Leu Val	Asn	Asn His	Thr	
2255			2260			2265			
ttc ttc	cag cat	cca gac	tta	atc aga	gtg ctc	cgc	gtg cac	gag	6849
Phe Phe	Gln His	Pro Asp	Leu	Ile Arg	Val Leu	Arg	Val His	Glu	
2270			2275			2280			
aac gtg	atg gcg	gtg atg	atg	aac acg	ctc ggc	cgc	cgc gcg	cag	6894
Asn Val	Met Ala	Val Met	Met	Asn Thr	Leu Gly	Arg	Arg Ala	Gln	
2285			2290			2295			
gcg cag	tcc gac	gca cag	ccc	tcc tcg	cag cct	gtc	gca gag	gat	6939
Ala Gln	Ser Asp	Ala Gln	Pro	Ser Ser	Gln Pro	Val	Ala Glu	Asp	
2300			2305			2310			
aac aag	gag aag	gac aca	tca	cac gag	atg gtg	gta	gct tgc	tgc	6984
Asn Lys	Glu Lys	Asp Thr	Ser	His Glu	Met Val	Val	Ala Cys	Cys	
2315			2320			2325			
cgt ttc	ctc tgc	tac ttc	tgc	cgc acc	ggg aga	cag	aac cag	aag	7029
Arg Phe	Leu Cys	Tyr Phe	Cys	Arg Thr	Gly Arg	Gln	Asn Gln	Lys	
2330			2335			2340			
gca atg	ttc gac	cac ttc	gac	ttc ctc	ctg gag	aac	tcc aac	atc	7074
Ala Met	Phe Asp	His Phe	Asp	Phe Leu	Leu Glu	Asn	Ser Asn	Ile	
2345			2350			2355			

ttg ctg tcc aga cct tcg ctg	aga gga tcc acg cct	cta gac gtg	7119
Leu Leu Ser Arg Pro Ser Leu	Arg Gly Ser Thr Pro	Leu Asp Val	
2360	2365	2370	
gct tat tcc agt ctt atg gag	aac act gaa ctg gcg	ctg gct ttg	7164
Ala Tyr Ser Ser Leu Met Glu	Asn Thr Glu Leu Ala	Leu Ala Leu	
2375	2380	2385	
aga gag cac tac ctg gag aag	ata gca gta tac ctg	tcc cgt tgt	7209
Arg Glu His Tyr Leu Glu Lys	Ile Ala Val Tyr Leu	Ser Arg Cys	
2390	2395	2400	
ggt ctg cag agc aac tcg gag	ctg gtg gag aag ggg	tac cct gac	7254
Gly Leu Gln Ser Asn Ser Glu	Leu Val Glu Lys Gly	Tyr Pro Asp	
2405	2410	2415	
ctc ggc tgg gat ccg gtc gag	ggg gag cgg tat ctt	gac ttc ctg	7299
Leu Gly Trp Asp Pro Val Glu	Gly Glu Arg Tyr Leu	Asp Phe Leu	
2420	2425	2430	
agg ttc tgt gtt tgg gta aac	ggc gaa agc gta gaa	gaa aac gcg	7344
Arg Phe Cys Val Trp Val Asn	Gly Glu Ser Val Glu	Glu Asn Ala	
2435	2440	2445	
aat cta gtg atc cgt ctc ctg	atc cgt cgt ccg gag	tgc ctc ggg	7389
Asn Leu Val Ile Arg Leu Leu	Ile Arg Arg Pro Glu	Cys Leu Gly	
2450	2455	2460	
ccg gcg ctg cgc ggc gag ggc	gag ggc ctg ctg aag	gct atc gtc	7434
Pro Ala Leu Arg Gly Glu Gly	Glu Gly Leu Leu Lys	Ala Ile Val	
2465	2470	2475	
gac gcc aac aag atg agc gag	agg atc gcc gac agg	agg aag ctc	7479
Asp Ala Asn Lys Met Ser Glu	Arg Ile Ala Asp Arg	Arg Lys Leu	
2480	2485	2490	
agg gaa atg gag cag gaa gga	gat gtt aac ttc agc	cac cct ctc	7524
Arg Glu Met Glu Gln Glu Gly	Asp Val Asn Phe Ser	His Pro Leu	
2495	2500	2505	
ccg gag tca gat gag gat gag	gac tac ata gac acg	ggg gcc gcc	7569
Pro Glu Ser Asp Glu Asp Glu	Asp Tyr Ile Asp Thr	Gly Ala Ala	
2510	2515	2520	
atc ttg aac ttc tac tgt aca	ttg gta gat ctg ctc	gga aga tgt	7614
Ile Leu Asn Phe Tyr Cys Thr	Leu Val Asp Leu Leu	Gly Arg Cys	
2525	2530	2535	
gct cct gat gct ggc gtt att	gct ctc ggc aag aac	gag tct ctc	7659
Ala Pro Asp Ala Gly Val Ile	Ala Leu Gly Lys Asn	Glu Ser Leu	
2540	2545	2550	
cgt gcc cgc gct atc ctg cgg	tcg ctg gtg ccg ctg	gag gac ctg	7704
Arg Ala Arg Ala Ile Leu Arg	Ser Leu Val Pro Leu	Glu Asp Leu	
2555	2560	2565	
cag gga gtg ctg agc ctg cgc	ttc acg ctc aac aac	cct gct gct	7749
Gln Gly Val Leu Ser Leu Arg	Phe Thr Leu Asn Asn	Pro Ala Ala	
2570	2575	2580	

gga gag gaa cga ccc aag tct gat atg cca tcg ggt ctg atc ccg Gly Glu Glu Arg Pro Lys Ser Asp Met Pro Ser Gly Leu Ile Pro 2585 2590 2595	7794
gga cac aag cag agc gtg gga ctg ttc ctg gag aga gtg tac ggc Gly His Lys Gln Ser Val Gly Leu Phe Leu Glu Arg Val Tyr Gly 2600 2605 2610	7839
atc gaa act cag gag ttg ttc tac aaa ctg ctg gag gaa gcc ttc Ile Glu Thr Gln Glu Leu Phe Tyr Lys Leu Leu Glu Glu Ala Phe 2615 2620 2625	7884
ctg cct gac ctc agg gct gcc act atg ctg gac agg aac gac ggc Leu Pro Asp Leu Arg Ala Ala Thr Met Leu Asp Arg Asn Asp Gly 2630 2635 2640	7929
tgc gaa tca gac atg gcg ctg tcg atg aac cgc tac atc ggc aac Cys Glu Ser Asp Met Ala Leu Ser Met Asn Arg Tyr Ile Gly Asn 2645 2650 2655	7974
tcg atc ctg ccg ctg ctg atc aaa cac gct tac ttc tac aac gaa Ser Ile Leu Pro Leu Leu Ile Lys His Ala Tyr Phe Tyr Asn Glu 2660 2665 2670	8019
gct gag aac tac gcc agt tta ttg gat gcc acg cta cat act gtt Ala Glu Asn Tyr Ala Ser Leu Leu Asp Ala Thr Leu His Thr Val 2675 2680 2685	8064
tat agg tta tcg aag aac cgc atg tta acc aag ggt caa cgt gaa Tyr Arg Leu Ser Lys Asn Arg Met Leu Thr Lys Gly Gln Arg Glu 2690 2695 2700	8109
gcg gtg tca gac ttc cta gtg gcg ctt act tca gcg atg cag ccc Ala Val Ser Asp Phe Leu Val Ala Leu Thr Ser Ala Met Gln Pro 2705 2710 2715	8154
tct atg ttg ctc aag ctg ctc agg aaa ttg acg gtc gac gtg tct Ser Met Leu Leu Lys Leu Leu Arg Lys Leu Thr Val Asp Val Ser 2720 2725 2730	8199
aaa ctg tcc gag tat act act gtc gct ctt agg ctg ctg acg ctg Lys Leu Ser Glu Tyr Thr Thr Val Ala Leu Arg Leu Leu Thr Leu 2735 2740 2745	8244
cac tac gag cgc tgc gcg aag tac tac ggc agc acg ggc gcg ggg His Tyr Glu Arg Cys Ala Lys Tyr Tyr Gly Ser Thr Gly Ala Gly 2750 2755 2760	8289
cag ggc gcg ttc ggc gcg tcg tcg gac gag gag aag cgc ctc acc Gln Gly Ala Phe Gly Ala Ser Ser Asp Glu Glu Lys Arg Leu Thr 2765 2770 2775	8334
atg atg ctc ttc tcc aac atc ttc gac tcg ctc agc aag atg gac Met Met Leu Phe Ser Asn Ile Phe Asp Ser Leu Ser Lys Met Asp 2780 2785 2790	8379
tac gag ccc gag ctc ttc ggg aag gcg ctg ccc tgt ctt att gct Tyr Glu Pro Glu Leu Phe Gly Lys Ala Leu Pro Cys Leu Ile Ala 2795 2800 2805	8424

ata gga tgc gct ctg cct cct gac tac tct ctc tca aag aac tat	8469
Ile Gly Cys Ala Leu Pro Pro Asp Tyr Ser Leu Ser Lys Asn Tyr	
2810 2815 2820	
gat ggt gag ttt tac ggc aaa gag caa gct gca ggt gac cta gac	8514
Asp Gly Glu Phe Tyr Gly Lys Glu Gln Ala Ala Gly Asp Leu Asp	
2825 2830 2835	
aac ccc caa tac gac cct cag ccc ata aac acg tcc tca gta gca	8559
Asn Pro Gln Tyr Asp Pro Gln Pro Ile Asn Thr Ser Ser Val Ala	
2840 2845 2850	
ttg aac aat gat ctc aac acg atc gta cag aag ttc tcg gaa cat	8604
Leu Asn Asn Asp Leu Asn Thr Ile Val Gln Lys Phe Ser Glu His	
2855 2860 2865	
tac cac gat gcg tgg gct agt agg aag att gag aac ggc tgg gtg	8649
Tyr His Asp Ala Trp Ala Ser Arg Lys Ile Glu Asn Gly Trp Val	
2870 2875 2880	
tat ggg gag ggc tgg tct gat agc cag aag act cat cct agg ctg	8694
Tyr Gly Glu Gly Trp Ser Asp Ser Gln Lys Thr His Pro Arg Leu	
2885 2890 2895	
aag cct tat aat atg ctt aat gat tat gaa aaa gag cgt tac aag	8739
Lys Pro Tyr Asn Met Leu Asn Asp Tyr Glu Lys Glu Arg Tyr Lys	
2900 2905 2910	
gag cca gta cgt gaa tct ctg aag gca ctt cta gcc atc ggt tgg	8784
Glu Pro Val Arg Glu Ser Leu Lys Ala Leu Leu Ala Ile Gly Trp	
2915 2920 2925	
tct gta gaa cat tca gaa gta gac ata ccg agt aac aac cga agc	8829
Ser Val Glu His Ser Glu Val Asp Ile Pro Ser Asn Asn Arg Ser	
2930 2935 2940	
tcc atg aga agg cag tcc aag tcg gga ggc cgc cct ccc gaa att	8874
Ser Met Arg Arg Gln Ser Lys Ser Gly Gly Arg Pro Pro Glu Ile	
2945 2950 2955	
gtg aca gac tcg gcg act ccg ttc aac tac aac cct cac cca gtc	8919
Val Thr Asp Ser Ala Thr Pro Phe Asn Tyr Asn Pro His Pro Val	
2960 2965 2970	
gac atg acc aac ttg acg cta tcg agg gag atg cag aac atg gcg	8964
Asp Met Thr Asn Leu Thr Leu Ser Arg Glu Met Gln Asn Met Ala	
2975 2980 2985	
gag agg ctc gct gac aac gca cac gac atc tgg gcg aag aag aag	9009
Glu Arg Leu Ala Asp Asn Ala His Asp Ile Trp Ala Lys Lys Lys	
2990 2995 3000	
aag gaa gaa ctc gtt act aat gga ggt ggc atc cac ccc caa cta	9054
Lys Glu Glu Leu Val Thr Asn Gly Gly Gly Ile His Pro Gln Leu	
3005 3010 3015	
gta ccc tac gac ctc cta acg gac aaa gaa aag aag aaa gat cga	9099
Val Pro Tyr Asp Leu Leu Thr Asp Lys Glu Lys Lys Lys Asp Arg	
3020 3025 3030	



gaa cgt tct caa gag ttc ctc Glu Arg Ser Gln Glu Phe Leu 3035	aaa tac ctt caa tac Lys Tyr Leu Gln Tyr 3040	caa ggg tac Gln Gly Tyr 3045	9144
aag ctc cac cgg ccc agc aag Lys Leu His Arg Pro Ser Lys 3050	gcg cca caa agt gat Ala Pro Gln Ser Asp 3055	acg gaa caa Thr Glu Gln 3060	9189
acc act acg ggg gta gca ata Thr Thr Thr Gly Val Ala Ile 3065	gag ttg aga ttc gca Glu Leu Arg Phe Ala 3070	tac tcg ctc Tyr Ser Leu 3075	9234
ctc gag aaa ttg atc cag tac Leu Glu Lys Leu Ile Gln Tyr 3080	atc gat agg gcc acc Ile Asp Arg Ala Thr 3085	att aat atg Ile Asn Met 3090	9279
aag ctt ttg aaa cct tcc act Lys Leu Leu Lys Pro Ser Thr 3095	acg ttt agt agg aga Thr Phe Ser Arg Arg 3100	agt agt ttt Ser Ser Phe 3105	9324
aag act agt acc agg gat att Lys Thr Ser Thr Arg Asp Ile 3110	aag ttc ttt tct aag Lys Phe Phe Ser Lys 3115	gtg gtg ctg Val Val Leu 3120	9369
cct cta atg gag aag tat ttc Pro Leu Met Glu Lys Tyr Phe 3125	tcg acg cat cgt aac Ser Thr His Arg Asn 3130	tac ttc ata Tyr Phe Ile 3135	9414
gct gta gct acg gcg acg aat Ala Val Ala Thr Ala Thr Asn 3140	aat gtt ggt gca gcc Asn Val Gly Ala Ala 3145	agc ctg aag Ser Leu Lys 3150	9459
gag aaa gag atg gta gct gct Glu Lys Glu Met Val Ala Ala 3155	ctg ttc tgt aag ctg Leu Phe Cys Lys Leu 3160	gct agc ttg Ala Ser Leu 3165	9504
ctt aga tct aga ctc gca gct Leu Arg Ser Arg Leu Ala Ala 3170	ttc ggt cct gac gtc Phe Gly Pro Asp Val 3175	cgc atc aca Arg Ile Thr 3180	9549
gtc cgc tgt ctc caa gtg ttg Val Arg Cys Leu Gln Val Leu 3185	gtg aag ggc atc gac Val Lys Gly Ile Asp 3190	gcc aag tcc Ala Lys Ser 3195	9594
tta gtg aag aac tgc ccc gag Leu Val Lys Asn Cys Pro Glu 3200	ttc atc agg acc tcc Phe Ile Arg Thr Ser 3205	atg ttg acc Met Leu Thr 3210	9639
ttc ttc aac aat gtc gct gat Phe Phe Asn Asn Val Ala Asp 3215	gat gta ggg cat acg Asp Val Gly His Thr 3220	atc atg aat Ile Met Asn 3225	9684
ttg cag gat ggt aaa tac gca Leu Gln Asp Gly Lys Tyr Ala 3230	cac cta cga ggt acc His Leu Arg Gly Thr 3235	cac ttg aag His Leu Lys 3240	9729
aca tcc acg tct ctc ggc tat Thr Ser Thr Ser Leu Gly Tyr 3245	atc aac gga gta ctg Ile Asn Gly Val Leu 3250	ctc ccc ata Leu Pro Ile 3255	9774

ctg aca gcc aaa ttc gac cat	ctg gct aac tgc gag	tac ggt gct	9819
Leu Thr Ala Lys Phe Asp His	Leu Ala Asn Cys Glu	Tyr Gly Ala	
3260	3265	3270	
gat ccg ttg ttg gac gag ata	caa gtg gcg tca tac	aag atg ttg	9864
Asp Pro Leu Leu Asp Glu Ile	Gln Val Ala Ser Tyr	Lys Met Leu	
3275	3280	3285	
ggc tcc ctg tac gcg ctc ggc	acg gac gct tcg ctc	aca cac gac	9909
Gly Ser Leu Tyr Ala Leu Gly	Thr Asp Ala Ser Leu	Thr His Asp	
3290	3295	3300	
aga aag tac ctc aag act gag	att gag aga cat aaa	cct gct ttg	9954
Arg Lys Tyr Leu Lys Thr Glu	Ile Glu Arg His Lys	Pro Ala Leu	
3305	3310	3315	
ggt tca tgt cta ggt gcg ttc	agt tcg aca ttc ccg	gta gcg ttc	9999
Gly Ser Cys Leu Gly Ala Phe	Ser Ser Thr Phe Pro	Val Ala Phe	
3320	3325	3330	
ctg gag cct cac ttg gac aaa	cac aac cag ttc tcc	ttg ctg aac	10044
Leu Glu Pro His Leu Asp Lys	His Asn Gln Phe Ser	Leu Leu Asn	
3335	3340	3345	
agg atc gct gac cat tct ttg	gaa gcc caa gac ata	atg cag aaa	10089
Arg Ile Ala Asp His Ser Leu	Glu Ala Gln Asp Ile	Met Gln Lys	
3350	3355	3360	
atg gaa caa tgc atg ccg acg	tta gag acg atc tta	ggc gag gtg	10134
Met Glu Gln Cys Met Pro Thr	Leu Glu Thr Ile Leu	Gly Glu Val	
3365	3370	3375	
gac caa ttc gtg gag tca gac	aag acg tac aac gaa	gcg ccg cat	10179
Asp Gln Phe Val Glu Ser Asp	Lys Thr Tyr Asn Glu	Ala Pro His	
3380	3385	3390	
atc atc gat gtg gtg ttg cct	tta ctc tgt tct tac	ttg ccg ttc	10224
Ile Ile Asp Val Val Leu Pro	Leu Leu Cys Ser Tyr	Leu Pro Phe	
3395	3400	3405	
tgg tgg gca cag ggg cct gat	aat gtt act cct act	ggc gga aac	10269
Trp Trp Ala Gln Gly Pro Asp	Asn Val Thr Pro Thr	Gly Gly Asn	
3410	3415	3420	
cac gta aca atg gta aca gcg	gaa cac atg aac cag	ctc ctc aag	10314
His Val Thr Met Val Thr Ala	Glu His Met Asn Gln	Leu Leu Lys	
3425	3430	3435	
aat gtt ctg aag ctc atc aaa	aag aac atc ggc aat	gag aac gcg	10359
Asn Val Leu Lys Leu Ile Lys	Lys Asn Ile Gly Asn	Glu Asn Ala	
3440	3445	3450	
ccg tgg atg acc cgc ata gcc	acc tac acc cag cag	atc atc atc	10404
Pro Trp Met Thr Arg Ile Ala	Thr Tyr Thr Gln Gln	Ile Ile Ile	
3455	3460	3465	
aac agc tcc gag gag ttg ctg	agg gat tcc ttc ctg	ccg ctc gct	10449
Asn Ser Ser Glu Glu Leu Leu	Arg Asp Ser Phe Leu	Pro Leu Ala	
3470	3475	3480	

gaa cgt gtt cgc aag cgc acg gac aat atg ttc cat aag gag gag	10494
Glu Arg Val Arg Lys Arg Thr Asp Asn Met Phe His Lys Glu Glu	
3485 3490 3495	
agc ttg aga ggg ttt att aag tcg tca aca gac gac aca tct caa	10539
Ser Leu Arg Gly Phe Ile Lys Ser Ser Thr Asp Asp Thr Ser Gln	
3500 3505 3510	
gta gag tca cag ata caa gaa gac tgg cag ctg ctg gtc aga gac	10584
Val Glu Ser Gln Ile Gln Glu Asp Trp Gln Leu Leu Val Arg Asp	
3515 3520 3525	
atc tac tcc ttc tac ccg cta ctc atc aag tac gtc gac ctg cag	10629
Ile Tyr Ser Phe Tyr Pro Leu Leu Ile Lys Tyr Val Asp Leu Gln	
3530 3535 3540	
agg aac cac tgg ctc agg aac aat gtt cca gag gcg gaa gag ctg	10674
Arg Asn His Trp Leu Arg Asn Asn Val Pro Glu Ala Glu Glu Leu	
3545 3550 3555	
tac aac cac gtg gcc gaa atc ttc aac ata tgg tcg aag agc cag	10719
Tyr Asn His Val Ala Glu Ile Phe Asn Ile Trp Ser Lys Ser Gln	
3560 3565 3570	
tac ttc ttg aag gag gaa cag aac ttc atc tct gcc aac gag att	10764
Tyr Phe Leu Lys Glu Glu Gln Asn Phe Ile Ser Ala Asn Glu Ile	
3575 3580 3585	
gat aac atg gtg ctg att atg cca aca gca aca aga aga gtg aca	10809
Asp Asn Met Val Leu Ile Met Pro Thr Ala Thr Arg Arg Val Thr	
3590 3595 3600	
gca gta aca gat ggt act cct caa ggc ggt gga aag aaa aag aag	10854
Ala Val Thr Asp Gly Thr Pro Gln Gly Gly Gly Lys Lys Lys Lys	
3605 3610 3615	
aag cac cgt gat aag aaa cgc gac aaa gac aag gaa gtc caa gcg	10899
Lys His Arg Asp Lys Lys Arg Asp Lys Asp Lys Glu Val Gln Ala	
3620 3625 3630	
tcc cta atg gta gct tgt ctg aag agg ttg cta cca gtt ggc ctt	10944
Ser Leu Met Val Ala Cys Leu Lys Arg Leu Leu Pro Val Gly Leu	
3635 3640 3645	
aac cta ttc gct ggc aga gaa caa gaa ctg gtg cag cat tgt aaa	10989
Asn Leu Phe Ala Gly Arg Glu Gln Glu Leu Val Gln His Cys Lys	
3650 3655 3660	
gac agg ttc ctg aag gta ggg acc ctc aag aaa atg tca gaa caa	11034
Asp Arg Phe Leu Lys Val Gly Thr Leu Lys Lys Met Ser Glu Gln	
3665 3670 3675	
gat gtg gca gaa ttc gcg aag acc cag ctg aca ctt cca gat aaa	11079
Asp Val Ala Glu Phe Ala Lys Thr Gln Leu Thr Leu Pro Asp Lys	
3680 3685 3690	
ata gat ccg gca gac gaa atg tct tgg caa cat tac ttg tat agc	11124
Ile Asp Pro Ala Asp Glu Met Ser Trp Gln His Tyr Leu Tyr Ser	
3695 3700 3705	

aag tta ggt tcg aag agt aag agc aat ata act gtg gaa act gct	11169
Lys Leu Gly Ser Lys Ser Lys Ser Asn Ile Thr Val Glu Thr Ala	
3710 3715 3720	
gaa aat aaa gcc aag att att gat gat act gtt gaa agg atc gtc	11214
Glu Asn Lys Ala Lys Ile Ile Asp Asp Thr Val Glu Arg Ile Val	
3725 3730 3735	
gct atg agt aaa gtg ctt ttc gga ttg cat atg atc gac cat ccc	11259
Ala Met Ser Lys Val Leu Phe Gly Leu His Met Ile Asp His Pro	
3740 3745 3750	
caa caa atg agt aag aac gtg tac cgg tcg gtg gtg tcc ata caa	11304
Gln Gln Met Ser Lys Asn Val Tyr Arg Ser Val Val Ser Ile Gln	
3755 3760 3765	
cgc aag cgc gcc gtc atc gcc tgc ttc cga caa act tcg cta cat	11349
Arg Lys Arg Ala Val Ile Ala Cys Phe Arg Gln Thr Ser Leu His	
3770 3775 3780	
tct ctg ccg aga cac cga gcg tgt aac atc ttc gct cgc acg tac	11394
Ser Leu Pro Arg His Arg Ala Cys Asn Ile Phe Ala Arg Thr Tyr	
3785 3790 3795	
tac gag ctc tgg ttg gaa gag gag aac att gga caa gaa gtt atg	11439
Tyr Glu Leu Trp Leu Glu Glu Glu Asn Ile Gly Gln Glu Val Met	
3800 3805 3810	
ata gaa gat ctt act caa tca ttc gaa gac gca gaa ctg aag aag	11484
Ile Glu Asp Leu Thr Gln Ser Phe Glu Asp Ala Glu Leu Lys Lys	
3815 3820 3825	
agt gac gtg gtg gag gaa ggt gag aag ccc gac ccc ctc acg cag	11529
Ser Asp Val Val Glu Glu Gly Glu Lys Pro Asp Pro Leu Thr Gln	
3830 3835 3840	
ctg gtc acc acc ttc tgt cgc ggc gcc atg act gag agg tcc ggc	11574
Leu Val Thr Thr Phe Cys Arg Gly Ala Met Thr Glu Arg Ser Gly	
3845 3850 3855	
gct tta cag gag gat ccc cta tac atg tct tac gca cac atc ata	11619
Ala Leu Gln Glu Asp Pro Leu Tyr Met Ser Tyr Ala His Ile Ile	
3860 3865 3870	
gcg aag tcc tgt gga gaa gaa gag gaa gaa ggg ggc ggg gaa gaa	11664
Ala Lys Ser Cys Gly Glu Glu Glu Glu Glu Glu Gly Gly Gly Glu Glu	
3875 3880 3885	
gag gaa ggg ggt gga gaa gct gag gcc gag gac gaa ggc aga gcc	11709
Glu Glu Gly Gly Gly Glu Ala Glu Ala Glu Asp Glu Gly Arg Ala	
3890 3895 3900	
agt ata cac gaa caa gag atg gag aaa cag aag ctt cta ttc cac	11754
Ser Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His	
3905 3910 3915	
caa gcg cga ctg gca gac cgc ggt gtt gcc gag atg gtg ttg ctg	11799
Gln Ala Arg Leu Ala Asp Arg Gly Val Ala Glu Met Val Leu Leu	
3920 3925 3930	

cat atc tcc gcg tct aaa ggc	ctg ccc agc gag atg gtc atg aag	11844
His Ile Ser Ala Ser Lys Gly	Leu Pro Ser Glu Met Val Met Lys	
3935	3940 3945	
aca tta cag ctc ggt att agt	ata ctg aga gga ggc aat att gat	11889
Thr Leu Gln Leu Gly Ile Ser	Ile Leu Arg Gly Gly Asn Ile Asp	
3950	3955 3960	
ata cag atg ggt atg ttg aac	cac ttg aaa gac aag aaa gac gtg	11934
Ile Gln Met Gly Met Leu Asn	His Leu Lys Asp Lys Lys Asp Val	
3965	3970 3975	
gga ttc ttc acg tcc atc gcc	ggc ctc atg aac tcc tgc tca gtg	11979
Gly Phe Phe Thr Ser Ile Ala	Gly Leu Met Asn Ser Cys Ser Val	
3980	3985 3990	
ctc gat ctt gac gcc ttc gag	agg aac acc aaa gct gaa ggt ctg	12024
Leu Asp Leu Asp Ala Phe Glu	Arg Asn Thr Lys Ala Glu Gly Leu	
3995	4000 4005	
ggc gtg ggt ctg gaa ggc gcc	gca gga gag aag aac atg cat gac	12069
Gly Val Gly Leu Glu Gly Ala	Ala Gly Glu Lys Asn Met His Asp	
4010	4015 4020	
gcc gag ttc acc tgc gca ctc	ttt agg ttc att cag ctc acc tgt	12114
Ala Glu Phe Thr Cys Ala Leu	Phe Arg Phe Ile Gln Leu Thr Cys	
4025	4030 4035	
gaa gga cac aac ttg gac tgg	cag aac tac ctg cga act cag gcc	12159
Glu Gly His Asn Leu Asp Trp	Gln Asn Tyr Leu Arg Thr Gln Ala	
4040	4045 4050	
ggt aac acg gcg gca gtg aac	gtg gtc atc tgc acc gtc gac tac	12204
Gly Asn Thr Ala Ala Val Asn	Val Val Ile Cys Thr Val Asp Tyr	
4055	4060 4065	
ctg ctg cgg ctg cag gag tcc	atc atg gac ttc tac tgg cac tac	12249
Leu Leu Arg Leu Gln Glu Ser	Ile Met Asp Phe Tyr Trp His Tyr	
4070	4075 4080	
tct agc aag gaa ctg atc gac	ccg gcc ggc aag gcg aat ttc ttc	12294
Ser Ser Lys Glu Leu Ile Asp	Pro Ala Gly Lys Ala Asn Phe Phe	
4085	4090 4095	
aag gcc att ggc gtg gct tcc	caa gta ttc aac acc ctc act gaa	12339
Lys Ala Ile Gly Val Ala Ser	Gln Val Phe Asn Thr Leu Thr Glu	
4100	4105 4110	
gtc ata cag gga cct tgt act	cag aac cag cag gct tta gct cac	12384
Val Ile Gln Gly Pro Cys Thr	Gln Asn Gln Gln Ala Leu Ala His	
4115	4120 4125	
tct agg tta tgg gac gct gtc	ggg ggt ttc ttg ttc cta ttc tcc	12429
Ser Arg Leu Trp Asp Ala Val	Gly Gly Phe Leu Phe Leu Phe Ser	
4130	4135 4140	
cac atg cag gac aag ttg tcg	aag cac tcg tcg cag gtg gac ctg	12474
His Met Gln Asp Lys Leu Ser	Lys His Ser Ser Gln Val Asp Leu	
4145	4150 4155	

ctg aag gaa ctc ctc aat ctg cag aag gac atg atc acc atg atg	12519
Leu Lys Glu Leu Leu Asn Leu Gln Lys Asp Met Ile Thr Met Met	
4160 4165 4170	
ctg tcc atg ctt gaa gga aat gtt gtt aat ggt aca atc ggc aag	12564
Leu Ser Met Leu Glu Gly Asn Val Val Asn Gly Thr Ile Gly Lys	
4175 4180 4185	
caa atg gtg gac act cta gta gaa tcg gcc tcc aac gtg gaa ctg	12609
Gln Met Val Asp Thr Leu Val Glu Ser Ala Ser Asn Val Glu Leu	
4190 4195 4200	
atc ctg aaa tac ttc gac atg ttc ctc aag ctg aag gac ctg act	12654
Ile Leu Lys Tyr Phe Asp Met Phe Leu Lys Leu Lys Asp Leu Thr	
4205 4210 4215	
tcc agc gcc agc ttc caa gag ata gat gcc aat aac gac ggc tgg	12699
Ser Ser Ala Ser Phe Gln Glu Ile Asp Ala Asn Asn Asp Gly Trp	
4220 4225 4230	
gtg ctg ccc aag gac ttc aag gag aag atg gaa caa cag aag agt	12744
Val Leu Pro Lys Asp Phe Lys Glu Lys Met Glu Gln Gln Lys Ser	
4235 4240 4245	
tat act ccc gaa gaa atc gag ttc ctc tta gct tgc tgc gag acg	12789
Tyr Thr Pro Glu Glu Ile Glu Phe Leu Leu Ala Cys Cys Glu Thr	
4250 4255 4260	
aac cac gac ggc aag tta gac tac atc ggt ttc tgc gac cgt ttc	12834
Asn His Asp Gly Lys Leu Asp Tyr Ile Gly Phe Cys Asp Arg Phe	
4265 4270 4275	
cac gag cct gcc aag gag atc ggg ttt aac ttg gcc gtg tta ctg	12879
His Glu Pro Ala Lys Glu Ile Gly Phe Asn Leu Ala Val Leu Leu	
4280 4285 4290	
act aac ttg tct gaa cat atg ccg aac gag cct aga ttg gct cgt	12924
Thr Asn Leu Ser Glu His Met Pro Asn Glu Pro Arg Leu Ala Arg	
4295 4300 4305	
ttc ctg gag acg gcg ggt tca gtc ctg aac tac ttc gaa cca ttc	12969
Phe Leu Glu Thr Ala Gly Ser Val Leu Asn Tyr Phe Glu Pro Phe	
4310 4315 4320	
ctg ggc cgt atc gag atc atg ggc ggc tct aag cgc atc gag cga	13014
Leu Gly Arg Ile Glu Ile Met Gly Gly Ser Lys Arg Ile Glu Arg	
4325 4330 4335	
gtc tac ttc gag atc aag gag tct aat atc gaa cag tgg gag aaa	13059
Val Tyr Phe Glu Ile Lys Glu Ser Asn Ile Glu Gln Trp Glu Lys	
4340 4345 4350	
ccg caa att aag gaa tcc aaa cgc gcg ttc ttc tac agc ata gta	13104
Pro Gln Ile Lys Glu Ser Lys Arg Ala Phe Phe Tyr Ser Ile Val	
4355 4360 4365	
aca gaa ggt ggt gat aaa gag aaa tta gaa gct ttc gtg aac ttc	13149
Thr Glu Gly Gly Asp Lys Glu Lys Leu Glu Ala Phe Val Asn Phe	
4370 4375 4380	

tgt gag gac gcc atc ttt gaa atg acg cac gcg tcg gga cta atg Cys Glu Asp Ala Ile Phe Glu Met Thr His Ala Ser Gly Leu Met 4385 4390 4395	13194
gcg gcg tcg gag gag tcg gtg gga ggg acc aag aat aga gag gcc Ala Ala Ser Glu Glu Ser Val Gly Gly Thr Lys Asn Arg Glu Ala 4400 4405 4410	13239
agc tat atg tat atg ggg gat gat gat gat gag aga gcc ggc aaa Ser Tyr Met Tyr Met Gly Asp Asp Asp Asp Glu Arg Ala Gly Lys 4415 4420 4425	13284
gat cca ttc cgt cgc gga ctc cag tca gtg aaa gac ggc gtc gcc Asp Pro Phe Arg Arg Gly Leu Gln Ser Val Lys Asp Gly Val Ala 4430 4435 4440	13329
acg gca ttt tct tcc tta tca cct tcc aac ata aag gcg aaa atc Thr Ala Phe Ser Ser Leu Ser Pro Ser Asn Ile Lys Ala Lys Ile 4445 4450 4455	13374
gca gac atg caa caa atg cca cca gcc gaa cta gca gtg ggc ttt Ala Asp Met Gln Gln Met Pro Pro Ala Glu Leu Ala Val Gly Phe 4460 4465 4470	13419
ttc aaa atg ttc ttc tat cta ttc tat tac ttg ggc tat gga gtt Phe Lys Met Phe Phe Tyr Leu Phe Tyr Tyr Leu Gly Tyr Gly Val 4475 4480 4485	13464
ctc gtc gtt gtc agg tat ata ttc ggt gtg ctc ttg ggt ctg atg Leu Val Val Val Arg Tyr Ile Phe Gly Val Leu Leu Gly Leu Met 4490 4495 4500	13509
cga ggt cct cag acg gat gaa ccg cct ccg gag ccg acg gaa gag Arg Gly Pro Gln Thr Asp Glu Pro Pro Pro Glu Pro Thr Glu Glu 4505 4510 4515	13554
gag aaa atc ggt cag ttg aga cac agg ttg cta gcg aca caa agt Glu Lys Ile Gly Gln Leu Arg His Arg Leu Leu Ala Thr Gln Ser 4520 4525 4530	13599
tct cgt cat ctc ccg gcg ttg cct cca gct gat gat acg gga cag Ser Arg His Leu Pro Ala Leu Pro Pro Ala Asp Asp Thr Gly Gln 4535 4540 4545	13644
atg caa gtg tcg gca ttc gga ctc gat atc acc aag gaa ggc aat Met Gln Val Ser Ala Phe Gly Leu Asp Ile Thr Lys Glu Gly Asn 4550 4555 4560	13689
gga cag ata caa gta aag ccg cac gaa tca ccc agc aca tcc act Gly Gln Ile Gln Val Lys Pro His Glu Ser Pro Ser Thr Ser Thr 4565 4570 4575	13734
cca tca tca ggc gag gag gcg gag gtg tca ccc gac gag agc gcc Pro Ser Ser Gly Glu Glu Ala Glu Val Ser Pro Asp Glu Ser Ala 4580 4585 4590	13779
gac cac acg gag gag cag aga ccg cct tct ctt atc gac ctg ctc Asp His Thr Glu Glu Gln Arg Pro Pro Ser Leu Ile Asp Leu Leu 4595 4600 4605	13824

ggt gga gaa caa gct aaa aag caa gct cag gag agg atg gaa gct Gly Gly Glu Gln Ala Lys Lys Gln Ala Gln Glu Arg Met Glu Ala 4610 4615 4620	13869
caa gct gct caa caa gct gct atg tcc gcc att gaa gct gaa agc Gln Ala Ala Gln Gln Ala Ala Met Ser Ala Ile Glu Ala Glu Ser 4625 4630 4635	13914
aaa aag gca gtg caa ggg ccc gcg cca tca gcg cta tct caa gtg Lys Lys Ala Val Gln Gly Pro Ala Pro Ser Ala Leu Ser Gln Val 4640 4645 4650	13959
gac ctg tcc cag tac acc cgg gcg gta gtc tcg ttc cta gct cgc Asp Leu Ser Gln Tyr Thr Arg Arg Val Val Ser Phe Leu Ala Arg 4655 4660 4665	14004
aac ttc tac aac ctg aag tac gtg gcg ctc gtg ctg gcc ttc tgt Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu Ala Phe Cys 4670 4675 4680	14049
atc aac ttc gtg ctg ctc ttc tat aag gta tct acc ctg gac ggt Ile Asn Phe Val Leu Leu Phe Tyr Lys Val Ser Thr Leu Asp Gly 4685 4690 4695	14094
gaa ggt ggt gaa ggt tcg ggt ctg ggt gat atc atc gcc ggt ggg Glu Gly Gly Glu Gly Ser Gly Leu Gly Asp Ile Ile Ala Gly Gly 4700 4705 4710	14139
ggt tcc gga tcc ggg gct ggc tct ggc agt gga gac ggt agt ggc Gly Ser Gly Ser Gly Ala Gly Ser Gly Ser Gly Asp Gly Ser Gly 4715 4720 4725	14184
gaa tca gga gaa gat gac gac gcg tta gaa gta gta cac ata gac Glu Ser Gly Glu Asp Asp Asp Ala Leu Glu Val Val His Ile Asp 4730 4735 4740	14229
gaa gac ttc ttc tat atg gaa cac gtc atc aaa atg gcg gcc gtg Glu Asp Phe Phe Tyr Met Glu His Val Ile Lys Met Ala Ala Val 4745 4750 4755	14274
ttg cac tct atc gtg tct ctg gct ata ctc atc gga tat tat cat Leu His Ser Ile Val Ser Leu Ala Ile Leu Ile Gly Tyr Tyr His 4760 4765 4770	14319
ctt aag gtg ccg cta gct atc ttc aaa cgc gag aag gag atc gct Leu Lys Val Pro Leu Ala Ile Phe Lys Arg Glu Lys Glu Ile Ala 4775 4780 4785	14364
cgt aaa ctg gaa ttc gac gga ctg tac atc gct gaa cag cct gaa Arg Lys Leu Glu Phe Asp Gly Leu Tyr Ile Ala Glu Gln Pro Glu 4790 4795 4800	14409
gac gac gac ctc aag agc cac tgg gac aaa ctc gtt ata tct gcc Asp Asp Asp Leu Lys Ser His Trp Asp Lys Leu Val Ile Ser Ala 4805 4810 4815	14454
aaa tca ttc ccc gta aac tac tgg gac aag ttc gtg aag aag aaa Lys Ser Phe Pro Val Asn Tyr Trp Asp Lys Phe Val Lys Lys Lys 4820 4825 4830	14499



gtt cgc gcc aaa tat tca gag aca tat gac ttc gac tcc atc tcc	14544
Val Arg Ala Lys Tyr Ser Glu Thr Tyr Asp Phe Asp Ser Ile Ser	
4835 4840 4845	
aac atg ttg ggc atg gag aag act tcc ttc tcc gcg caa gaa gaa	14589
Asn Met Leu Gly Met Glu Lys Thr Ser Phe Ser Ala Gln Glu Glu	
4850 4855 4860	
gaa ggc agc aaa gga ctt att cat tac ata atc aac ata gac tgg	14634
Glu Gly Ser Lys Gly Leu Ile His Tyr Ile Ile Asn Ile Asp Trp	
4865 4870 4875	
cgc tac caa gtg tgg aag gcg ggc gtg acg atc aca gac aac tcg	14679
Arg Tyr Gln Val Trp Lys Ala Gly Val Thr Ile Thr Asp Asn Ser	
4880 4885 4890	
ttc ctc tac tct cta tgg tac ttc tcc ttc tcc gtg atg ggg aac	14724
Phe Leu Tyr Ser Leu Trp Tyr Phe Ser Phe Ser Val Met Gly Asn	
4895 4900 4905	
ttc aac aac ttc ttc ttc gcc gca cat ttg ttg gac gtg gct gtt	14769
Phe Asn Asn Phe Phe Phe Ala Ala His Leu Leu Asp Val Ala Val	
4910 4915 4920	
ggg ttt aag acc ctg agg act atc ttg cag tct gtc acg cat aat	14814
Gly Phe Lys Thr Leu Arg Thr Ile Leu Gln Ser Val Thr His Asn	
4925 4930 4935	
gga aaa cag ctg gta tta acg gtg atg ctg ctg act ata atc gtg	14859
Gly Lys Gln Leu Val Leu Thr Val Met Leu Leu Thr Ile Ile Val	
4940 4945 4950	
tac atc tac acg gtg atc gcg ttc aac ttc ttc cgc aag ttc tac	14904
Tyr Ile Tyr Thr Val Ile Ala Phe Asn Phe Phe Arg Lys Phe Tyr	
4955 4960 4965	
gtg cag gag gag gac gac gaa gtc aat agg aac tgc cat gat atg	14949
Val Gln Glu Glu Asp Asp Glu Val Asn Arg Asn Cys His Asp Met	
4970 4975 4980	
ttg acg tgc ttc gtg ttc aac ttg tac aag ggc gtg cgg gcg ggc	14994
Leu Thr Cys Phe Val Phe Asn Leu Tyr Lys Gly Val Arg Ala Gly	
4985 4990 4995	
ggc ggc atc ggc gac gag ctg gag ccg cct gat gga gac gac tcc	15039
Gly Gly Ile Gly Asp Glu Leu Glu Pro Pro Asp Gly Asp Asp Ser	
5000 5005 5010	
gag gtc tac cgc atc atc ttc gac atc tcc ctc ttc ttc ttc atc	15084
Glu Val Tyr Arg Ile Ile Phe Asp Ile Ser Leu Phe Phe Phe Ile	
5015 5020 5025	
atc gtc atc ctg ctc gct atc ctg cag ggt ttg atc atc gac gcg	15129
Ile Val Ile Leu Leu Ala Ile Leu Gln Gly Leu Ile Ile Asp Ala	
5030 5035 5040	
ttc gga gag ctg cgt gac cag ttg gag tcg gtg aag gag gac atg	15174
Phe Gly Glu Leu Arg Asp Gln Leu Glu Ser Val Lys Glu Asp Met	
5045 5050 5055	

gag tcc aac tgc ttc atc tgc ggc atc aat aaa gac tat ttt gat 15219  
 Glu Ser Asn Cys Phe Ile Cys Gly Ile Asn Lys Asp Tyr Phe Asp  
 5060 5065 5070

aaa gtg ccg cac ggg ttc gac aca cac gtg cag agg gaa cat aat 15264  
 Lys Val Pro His Gly Phe Asp Thr His Val Gln Arg Glu His Asn  
 5075 5080 5085

cta gct aat tac atg ttc ttc ctc atg cat ctc att aat aaa ccc 15309  
 Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile Asn Lys Pro  
 5090 5095 5100

gat acg gaa tat aca ggt caa gaa acc tac gta tgg aac atg tac 15354  
 Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp Asn Met Tyr  
 5105 5110 5115

aca caa aga tgt tgg gac ttc ttc ccc gtg gga gat tgt ttc cga 15399  
 Thr Gln Arg Cys Trp Asp Phe Phe Pro Val Gly Asp Cys Phe Arg  
 5120 5125 5130

aag caa tac gaa gac ctc atg gga gaa tag 15429  
 Lys Gln Tyr Glu Asp Leu Met Gly Glu  
 5135 5140

<210> 144  
 <211> 5142  
 <212> PRT  
 <213> *Heliothis virescens*

<220>  
 <223> pXL-Hv3

<400> 144  
 Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe  
 1 5 10 15  
 Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
 20 25 30  
 Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
 35 40 45  
 Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
 50 55 60  
 Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
 65 70 75 80  
 Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr  
 85 90 95  
 Gly Ser Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg  
 100 105 110  
 His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser  
 115 120 125  
 Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly

130						135						140					
Glu	Ala	Cys	Trp	Trp	Thr	Leu	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu		
145					150					155					160		
Gly	Glu	Lys	Val	Arg	Val	Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ala		
				165					170					175			
Thr	Glu	Arg	Tyr	Leu	His	Thr	Thr	Lys	Glu	Asn	Glu	Val	Ser	Ile	Val		
			180					185					190				
Asn	Ala	Ser	Phe	His	Val	Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr		
		195					200					205					
Gly	Ile	Ser	Arg	Met	Lys	Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val		
	210					215					220						
Leu	Arg	Phe	Phe	His	Gly	Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr		
225					230					235					240		
Trp	Thr	Lys	Asp	Gly	Gly	Gln	Asn	Ile	Val	Val	Tyr	Glu	Gly	Gly	Ser		
				245					250					255			
Val	Met	Ser	Gln	Ala	Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr		
			260					265					270				
Lys	Trp	Ala	Gly	Gly	Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg		
		275					280					285					
His	Ile	Thr	Thr	Gly	Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu		
	290					295					300						
Tyr	Leu	Val	Ser	Arg	Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys		
305					310					315					320		
Leu	Arg	Gln	Glu	Lys	Gly	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp		
				325					330					335			
Leu	Glu	Val	Ile	Gly	Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val		
			340					345					350				
Ile	Val	Gln	His	Ser	Glu	Thr	Gly	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr		
		355					360					365					
Glu	Thr	Lys	Lys	Lys	Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile		
	370					375					380						
Leu	His	Glu	Glu	Gly	Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser		
385					390					395					400		
Gln	Glu	Glu	Glu	Ser	Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser		
				405					410					415			
Leu	Phe	Thr	Lys	Phe	Ile	Asn	Gly	Leu	Glu	Thr	Leu	Gln	Glu	Asn	Arg		
			420					425					430				
Arg	His	Ser	Met	Phe	Phe	Ala	Ser	Val	Asn	Leu	Gly	Glu	Met	Val	Met		
		435					440					445					
Cys	Leu	Glu	Asp	Leu	Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Asp	Glu	Asp	Met		

450					455					460					
Glu	His	Glu	Glu	Lys	Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln
465					470					475					480
Asp	Leu	Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile
			485						490					495	
Val	Lys	Ile	Asn	Val	Ile	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu
			500					505					510		
Ala	Gly	Asp	Glu	Ser	Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu
		515					520					525			
Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala
	530					535					540				
Gln	Phe	Ala	Asn	Ser	Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly
545					550					555					560
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys
				565					570					575	
Val	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His
			580					585					590		
Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys
		595					600					605			
Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val
	610					615					620				
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn
625					630					635					640
Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro
				645					650					655	
Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp
			660					665					670		
Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met
		675					680					685			
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr
	690					695					700				
Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu
705					710					715					720
Tyr	Ser	Tyr	Gly	Phe	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys
				725					730					735	
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly
			740					745					750		
Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe
		755					760					765			
Met	Phe	Asn	Gly	Val	Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu

770	775	780
Glu Gly Met Phe Phe Pro Val Ile Ser Cys Ser Ser Lys Leu Ser Cys 785 790 795 800		
Arg Phe Leu Leu Gly Gly Glu His Gly Arg Leu Arg His Ala Ala Pro 805 810 815		
Glu Gly Tyr Ser Pro Leu Val Glu Ser Leu Leu Pro Gln Gln Ile Leu 820 825 830		
Ser Leu Glu Pro Cys Phe Tyr Phe Gly Asn Leu Ser Lys Arg Ala Leu 835 840 845		
Ala Gly Pro Pro Leu Val Gln Asp Asp Thr Ala Phe Val Pro Thr Pro 850 855 860		
Val Asp Thr Leu Gln Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg 865 870 875 880		
Asp Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Met Asn Lys Ile 885 890 895		
Glu Ala Gly Trp Met Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile 900 905 910		
His Pro Cys Leu Val Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg 915 920 925		
Tyr Asp Ile Gln Leu Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu 930 935 940		
Gly Tyr Tyr Ile Ser Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val 945 950 955 960		
Arg Leu Pro Asn Glu Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala 965 970 975		
Pro Leu Asp Leu Gly Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu 980 985 990		
Val Asp Gln Leu Ala Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg 995 1000 1005		
Ile Gln Gln Gly Trp Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met 1010 1015 1020		
His Arg Ser Pro His Leu Val Pro Tyr Pro Lys Val Asp Asp Ala 1025 1030 1035		
Ile Lys Lys Ala Asn Arg Asp Thr Ala Ser Glu Thr Val Arg Thr 1040 1045 1050		
Leu Leu Val Tyr Gly Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln 1055 1060 1065		
His Glu Ala Leu Leu Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp 1070 1075 1080		
Phe Arg Thr Tyr Arg Ala Glu Lys Asn Tyr Ala Val Ser Ser Gly		

1085					1090					1095				
Lys	Trp	Tyr	Phe	Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg
1100						1105					1110			
Val	Gly	Trp	Ala	His	Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly
1115						1120					1125			
Gln	Asp	Glu	Asn	Ser	Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys
1130						1135					1140			
Val	Tyr	Ser	Gly	Asn	Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val
1145						1150					1155			
Gly	Asp	Val	Val	Gly	Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile
1160						1165					1170			
Ser	Phe	Ser	Leu	Asn	Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly
1175						1180					1185			
Glu	Thr	Thr	Phe	Ala	Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala
1190						1195					1200			
Cys	Thr	Leu	Gly	Val	Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln
1205						1210					1215			
Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu
1220						1225					1230			
Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn	Met	Glu	Arg	Asp	Val	Thr	His
1235						1240					1245			
Trp	Tyr	Thr	Lys	Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met
1250						1255					1260			
Ile	Asp	Thr	Arg	Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp
1265						1270					1275			
Thr	Pro	Pro	Cys	Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met
1280						1285					1290			
Glu	Lys	Ala	Asn	Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile
1295						1300					1305			
Cys	His	Asn	Glu	Phe	Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp
1310						1315					1320			
Val	Glu	Ile	Lys	Asp	Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val
1325						1330					1335			
Glu	Ala	Gln	Met	Pro	Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly
1340						1345					1350			
Phe	Thr	Met	Asn	Asp	Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln
1355						1360					1365			
Glu	Glu	Leu	Pro	Ser	Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro
1370						1375					1380			
Pro	Arg	Lys	Gly	Ser	Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr

1385		1390		1395
Asn Asn Leu Gln Pro Gly Gln Val Asn Gly Met His Arg Ser Thr				
1400		1405		1410
Ser Glu Ala Glu Met Ala Lys Tyr Asp Leu Gly Ala Gln Gly Leu				
1415		1420		1425
Thr Pro Asp Asp Lys Lys Asp Lys Arg Gly Arg Ser Pro Phe Lys				
1430		1435		1440
Phe Phe Arg Ser Lys Arg Gly Glu Ser Ser Asp Arg Ala Lys Ser				
1445		1450		1455
Arg Lys Ser Lys Thr Pro Asp Pro Phe Ser Asp Thr Glu Val Ser				
1460		1465		1470
Pro Glu Arg Gly Ala Arg Arg Pro Asn Pro Gln Ile Lys Val Ser				
1475		1480		1485
Gln Ala Asn Gln Arg Tyr Asn Gly Met Asn Ala Arg Pro Ser Arg				
1490		1495		1500
Thr Asn Leu Tyr Gly Ser Gln Val Gly Leu Asn Ser Asn Ala Gln				
1505		1510		1515
Met Ala Thr Pro Thr Gln Asp Arg Lys Gln Met Thr Thr Ser Thr				
1520		1525		1530
Leu Ala Gln Ser Ala Thr Glu Thr Val Gly Asn Glu Ile Phe Asp				
1535		1540		1545
Ala Glu Cys Leu Lys Leu Ile Asn Glu Tyr Phe Tyr Gly Val Arg				
1550		1555		1560
Ile Tyr Pro Gly Gln Asp Pro Thr His Val Tyr Ile Gly Trp Val				
1565		1570		1575
Thr Thr Gln Tyr His Leu His Ser Lys Asp Phe Asn Gln Ser Lys				
1580		1585		1590
Val Thr Lys Ser Ser Val Ile Ile Thr Asp Asp Tyr Asp Arg Val				
1595		1600		1605
Val Glu Asn Val Asn Arg Gln Ser Cys Tyr Met Val Arg Ala Asp				
1610		1615		1620
Glu Leu Tyr Asn Glu Val Met Ala Glu Ala Thr Ala Lys Gly Ala				
1625		1630		1635
Ser Gln Gly Met Phe Ile Gly Cys Ser Val Asp Thr Ser Thr Gly				
1640		1645		1650
Ser Val Ser Phe Thr Cys Glu Gly Lys Asp Thr Ser Phe Lys Phe				
1655		1660		1665
Lys Met Glu Pro Glu Thr Lys Leu Phe Pro Ala Ile Phe Val Glu				
1670		1675		1680
Ala Thr Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg Ser Ala				

1685					1690					1695				
Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr	Ser	Asp	Lys
1700						1705					1710			
His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu
1715						1720					1725			
Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Gln	Ser	Leu	Gln	Val
1730						1735					1740			
His	Ala	Leu	Lys	Leu	Ser	Asp	Ile	Arg	Gly	Trp	Ser	Met	Leu	Cys
1745						1750					1755			
Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp
1760						1765					1770			
Arg	Cys	Met	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp	Lys	Leu	Leu
1775						1780					1785			
Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	Leu	Cys	Tyr
1790						1795					1800			
Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Thr	His	Val	Asp
1805						1810					1815			
Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Gln	Ser	Gln	Tyr	Met	Ser	Gly
1820						1825					1830			
Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu
1835						1840					1845			
Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Ala	Cys	Lys	Asn	Glu	Phe	Val
1850						1855					1860			
Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala	Leu	Tyr	Glu	Glu	Pro	Asp
1865						1870					1875			
Met	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro
1880						1885					1890			
Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu	Ser	Ile	Thr	Glu	Ile	Ser
1895						1900					1905			
Asn	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Glu	Val	Val	Arg	Glu	Phe
1910						1915					1920			
Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val	Glu	Thr	Asn	Gln	Val	His
1925						1930					1935			
Asn	Arg	Asp	Pro	Val	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro
1940						1945					1950			
Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	Met	Met	Arg
1955						1960					1965			
Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Thr	Asn	Pro	Glu	Thr
1970						1975					1980			
Trp	Asp	Pro	Ser	Phe	Asp	Lys	Gly	Gly	Lys	Asp	Glu	His	Arg	Lys



1985					1990					1995				
Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met
2000						2005					2010			
Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp	Ile	Gln	Leu	Arg	His	Arg
2015						2020					2025			
Val	Glu	Ala	Ile	Ile	Ala	Phe	Ala	His	Asp	Phe	Val	Gly	Asp	Leu
2030						2035					2040			
Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr	Glu	Ile	Lys	Gln	Ser	Asp
2045						2050					2055			
Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys
2060						2065					2070			
Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	Leu	Ser	Phe	Lys	His	Leu
2075						2080					2085			
Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro	Cys	Gly	Glu	Glu	Leu	Ile
2090						2095					2100			
Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr	Leu	Met	Ala	His	Val	Ser
2105						2110					2115			
Leu	His	Ala	Leu	Gln	Glu	Pro	Asp	Ala	Ala	Glu	Asn	Gln	Glu	Pro
2120						2125					2130			
Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys	Leu	Tyr	Asn	Ile	Ile	Asn
2135						2140					2145			
Thr	Val	Lys	Glu	Leu	Glu	Glu	Glu	Ala	Lys	Ala	Ile	Glu	Glu	Pro
2150						2155					2160			
Pro	Lys	Lys	Thr	Pro	Glu	Glu	Lys	Phe	Arg	Lys	Val	Leu	Ile	Gln
2165						2170					2175			
Thr	Ile	Val	Asn	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu	Thr	Pro	Lys
2180						2185					2190			
Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Val	Arg	Gln	Tyr	Asp	Ala
2195						2200					2205			
Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu	Lys	Thr	Tyr	Val	Ile	Asn
2210						2215					2220			
Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Glu	Met	Trp	Val	Gly	Leu	Ser
2225						2230					2235			
Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln	Glu	Glu	Glu
2240						2245					2250			
Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn	Asn	His	Thr
2255						2260					2265			
Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Val	Leu	Arg	Val	His	Glu
2270						2275					2280			
Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly	Arg	Arg	Ala	Gln

2285	2290	2295
Ala Gln Ser Asp Ala Gln Pro 2300	Ser Ser Gln Pro Val 2305	Ala Glu Asp 2310
Asn Lys Glu Lys Asp Thr Ser 2315	His Glu Met Val Val 2320	Ala Cys Cys 2325
Arg Phe Leu Cys Tyr Phe Cys 2330	Arg Thr Gly Arg Gln 2335	Asn Gln Lys 2340
Ala Met Phe Asp His Phe Asp 2345	Phe Leu Leu Glu Asn 2350	Ser Asn Ile 2355
Leu Leu Ser Arg Pro Ser Leu 2360	Arg Gly Ser Thr Pro 2365	Leu Asp Val 2370
Ala Tyr Ser Ser Leu Met Glu 2375	Asn Thr Glu Leu Ala 2380	Leu Ala Leu 2385
Arg Glu His Tyr Leu Glu Lys 2390	Ile Ala Val Tyr Leu 2395	Ser Arg Cys 2400
Gly Leu Gln Ser Asn Ser Glu 2405	Leu Val Glu Lys Gly 2410	Tyr Pro Asp 2415
Leu Gly Trp Asp Pro Val Glu 2420	Gly Glu Arg Tyr Leu 2425	Asp Phe Leu 2430
Arg Phe Cys Val Trp Val Asn 2435	Gly Glu Ser Val Glu 2440	Glu Asn Ala 2445
Asn Leu Val Ile Arg Leu Leu 2450	Ile Arg Arg Pro Glu 2455	Cys Leu Gly 2460
Pro Ala Leu Arg Gly Glu Gly 2465	Glu Gly Leu Leu Lys 2470	Ala Ile Val 2475
Asp Ala Asn Lys Met Ser Glu 2480	Arg Ile Ala Asp Arg 2485	Arg Lys Leu 2490
Arg Glu Met Glu Gln Glu Gly 2495	Asp Val Asn Phe Ser 2500	His Pro Leu 2505
Pro Glu Ser Asp Glu Asp Glu 2510	Asp Tyr Ile Asp Thr 2515	Gly Ala Ala 2520
Ile Leu Asn Phe Tyr Cys Thr 2525	Leu Val Asp Leu Leu 2530	Gly Arg Cys 2535
Ala Pro Asp Ala Gly Val Ile 2540	Ala Leu Gly Lys Asn 2545	Glu Ser Leu 2550
Arg Ala Arg Ala Ile Leu Arg 2555	Ser Leu Val Pro Leu 2560	Glu Asp Leu 2565
Gln Gly Val Leu Ser Leu Arg 2570	Phe Thr Leu Asn Asn 2575	Pro Ala Ala 2580
Gly Glu Glu Arg Pro Lys Ser	Asp Met Pro Ser Gly	Leu Ile Pro

2585						2590						2595			
Gly His	Lys Gln Ser Val	Gly Leu Phe Leu Glu Arg	Val Tyr Gly												
2600		2605				2610									
Ile Glu	Thr Gln Glu Leu Phe	Tyr Lys Leu Leu Glu	Glu Ala Phe												
2615		2620				2625									
Leu Pro	Asp Leu Arg Ala Ala	Thr Met Leu Asp Arg	Asn Asp Gly												
2630		2635				2640									
Cys Glu	Ser Asp Met Ala Leu	Ser Met Asn Arg Tyr	Ile Gly Asn												
2645		2650				2655									
Ser Ile	Leu Pro Leu Leu Ile	Lys His Ala Tyr Phe	Tyr Asn Glu												
2660		2665				2670									
Ala Glu	Asn Tyr Ala Ser Leu	Leu Asp Ala Thr Leu	His Thr Val												
2675		2680				2685									
Tyr Arg	Leu Ser Lys Asn Arg	Met Leu Thr Lys Gly	Gln Arg Glu												
2690		2695				2700									
Ala Val	Ser Asp Phe Leu Val	Ala Leu Thr Ser Ala	Met Gln Pro												
2705		2710				2715									
Ser Met	Leu Leu Lys Leu Leu	Arg Lys Leu Thr Val	Asp Val Ser												
2720		2725				2730									
Lys Leu	Ser Glu Tyr Thr Thr	Val Ala Leu Arg Leu	Leu Thr Leu												
2735		2740				2745									
His Tyr	Glu Arg Cys Ala Lys	Tyr Tyr Gly Ser Thr	Gly Ala Gly												
2750		2755				2760									
Gln Gly	Ala Phe Gly Ala Ser	Ser Asp Glu Glu Lys	Arg Leu Thr												
2765		2770				2775									
Met Met	Leu Phe Ser Asn Ile	Phe Asp Ser Leu Ser	Lys Met Asp												
2780		2785				2790									
Tyr Glu	Pro Glu Leu Phe Gly	Lys Ala Leu Pro Cys	Leu Ile Ala												
2795		2800				2805									
Ile Gly	Cys Ala Leu Pro Pro	Asp Tyr Ser Leu Ser	Lys Asn Tyr												
2810		2815				2820									
Asp Gly	Glu Phe Tyr Gly Lys	Glu Gln Ala Ala Gly	Asp Leu Asp												
2825		2830				2835									
Asn Pro	Gln Tyr Asp Pro Gln	Pro Ile Asn Thr Ser	Ser Val Ala												
2840		2845				2850									
Leu Asn	Asn Asp Leu Asn Thr	Ile Val Gln Lys Phe	Ser Glu His												
2855		2860				2865									
Tyr His	Asp Ala Trp Ala Ser	Arg Lys Ile Glu Asn	Gly Trp Val												
2870		2875				2880									
Tyr Gly	Glu Gly Trp Ser Asp	Ser Gln Lys Thr His	Pro Arg Leu												

2885					2890					2895				
Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr	Glu	Lys	Glu	Arg	Tyr	Lys
2900						2905					2910			
Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp
2915						2920					2925			
Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile	Pro	Ser	Asn	Asn	Arg	Ser
2930						2935					2940			
Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly	Gly	Arg	Pro	Pro	Glu	Ile
2945						2950					2955			
Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val
2960						2965					2970			
Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala
2975						2980					2985			
Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys
2990						2995					3000			
Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly	Gly	Ile	His	Pro	Gln	Leu
3005						3010					3015			
Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg
3020						3025					3030			
Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr
3035						3040					3045			
Lys	Leu	His	Arg	Pro	Ser	Lys	Ala	Pro	Gln	Ser	Asp	Thr	Glu	Gln
3050						3055					3060			
Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu
3065						3070					3075			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp	Arg	Ala	Thr	Ile	Asn	Met
3080						3085					3090			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3095						3100					3105			
Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3110						3115					3120			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3125						3130					3135			
Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys
3140						3145					3150			
Glu	Lys	Glu	Met	Val	Ala	Ala	Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu
3155						3160					3165			
Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3170						3175					3180			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Lys	Ser

3185		3190		3195
Leu Val 3200	Lys Asn Cys Pro	Glu Phe Ile Arg Thr 3205	Ser Met Leu Thr 3210	
Phe Phe 3215	Asn Asn Val Ala	Asp Asp Val Gly His 3220	Thr Ile Met Asn 3225	
Leu Gln 3230	Asp Gly Lys Tyr	Ala His Leu Arg Gly 3235	Thr His Leu Lys 3240	
Thr Ser 3245	Thr Ser Leu Gly	Tyr Ile Asn Gly Val 3250	Leu Leu Pro Ile 3255	
Leu Thr 3260	Ala Lys Phe Asp	His Leu Ala Asn Cys 3265	Glu Tyr Gly Ala 3270	
Asp Pro 3275	Leu Leu Asp Glu	Ile Gln Val Ala Ser 3280	Tyr Lys Met Leu 3285	
Gly Ser 3290	Leu Tyr Ala Leu	Gly Thr Asp Ala Ser 3295	Leu Thr His Asp 3300	
Arg Lys 3305	Tyr Leu Lys Thr	Glu Ile Glu Arg His 3310	Lys Pro Ala Leu 3315	
Gly Ser 3320	Cys Leu Gly Ala	Phe Ser Ser Thr Phe 3325	Pro Val Ala Phe 3330	
Leu Glu 3335	Pro His Leu Asp	Lys His Asn Gln Phe 3340	Ser Leu Leu Asn 3345	
Arg Ile 3350	Ala Asp His Ser	Leu Glu Ala Gln Asp 3355	Ile Met Gln Lys 3360	
Met Glu 3365	Gln Cys Met Pro	Thr Leu Glu Thr Ile 3370	Leu Gly Glu Val 3375	
Asp Gln 3380	Phe Val Glu Ser	Asp Lys Thr Tyr Asn 3385	Glu Ala Pro His 3390	
Ile Ile 3395	Asp Val Val Leu	Pro Leu Leu Cys Ser 3400	Tyr Leu Pro Phe 3405	
Trp Trp 3410	Ala Gln Gly Pro	Asp Asn Val Thr Pro 3415	Thr Gly Gly Asn 3420	
His Val 3425	Thr Met Val Thr	Ala Glu His Met Asn 3430	Gln Leu Leu Lys 3435	
Asn Val 3440	Leu Lys Leu Ile	Lys Lys Asn Ile Gly 3445	Asn Glu Asn Ala 3450	
Pro Trp 3455	Met Thr Arg Ile	Ala Thr Tyr Thr Gln 3460	Gln Ile Ile Ile 3465	
Asn Ser 3470	Ser Glu Glu Leu	Leu Arg Asp Ser Phe 3475	Leu Pro Leu Ala 3480	
Glu Arg	Val Arg Lys Arg Thr	Asp Asn Met Phe His	Lys Glu Glu	

3485		3490		3495
Ser Leu Arg Gly Phe Ile Lys	Ser Ser Thr Asp Asp Thr Ser Gln			
3500	3505	3510		
Val Glu Ser Gln Ile Gln Glu	Asp Trp Gln Leu Leu Val Arg Asp			
3515	3520	3525		
Ile Tyr Ser Phe Tyr Pro Leu	Leu Ile Lys Tyr Val Asp Leu Gln			
3530	3535	3540		
Arg Asn His Trp Leu Arg Asn	Asn Val Pro Glu Ala Glu Glu Leu			
3545	3550	3555		
Tyr Asn His Val Ala Glu Ile	Phe Asn Ile Trp Ser Lys Ser Gln			
3560	3565	3570		
Tyr Phe Leu Lys Glu Glu Gln	Asn Phe Ile Ser Ala Asn Glu Ile			
3575	3580	3585		
Asp Asn Met Val Leu Ile Met	Pro Thr Ala Thr Arg Arg Val Thr			
3590	3595	3600		
Ala Val Thr Asp Gly Thr Pro	Gln Gly Gly Gly Lys Lys Lys Lys			
3605	3610	3615		
Lys His Arg Asp Lys Lys Arg	Asp Lys Asp Lys Glu Val Gln Ala			
3620	3625	3630		
Ser Leu Met Val Ala Cys Leu	Lys Arg Leu Leu Pro Val Gly Leu			
3635	3640	3645		
Asn Leu Phe Ala Gly Arg Glu	Gln Glu Leu Val Gln His Cys Lys			
3650	3655	3660		
Asp Arg Phe Leu Lys Val Gly	Thr Leu Lys Lys Met Ser Glu Gln			
3665	3670	3675		
Asp Val Ala Glu Phe Ala Lys	Thr Gln Leu Thr Leu Pro Asp Lys			
3680	3685	3690		
Ile Asp Pro Ala Asp Glu Met	Ser Trp Gln His Tyr Leu Tyr Ser			
3695	3700	3705		
Lys Leu Gly Ser Lys Ser Lys	Ser Asn Ile Thr Val Glu Thr Ala			
3710	3715	3720		
Glu Asn Lys Ala Lys Ile Ile	Asp Asp Thr Val Glu Arg Ile Val			
3725	3730	3735		
Ala Met Ser Lys Val Leu Phe	Gly Leu His Met Ile Asp His Pro			
3740	3745	3750		
Gln Gln Met Ser Lys Asn Val	Tyr Arg Ser Val Val Ser Ile Gln			
3755	3760	3765		
Arg Lys Arg Ala Val Ile Ala	Cys Phe Arg Gln Thr Ser Leu His			
3770	3775	3780		
Ser Leu Pro Arg His Arg Ala	Cys Asn Ile Phe Ala Arg Thr Tyr			

3785		3790		3795
Tyr Glu Leu Trp Leu Glu Glu Glu Asn Ile Gly Gln Glu Val Met				
3800		3805		3810
Ile Glu Asp Leu Thr Gln Ser Phe Glu Asp Ala Glu Leu Lys Lys				
3815		3820		3825
Ser Asp Val Val Glu Glu Gly Glu Lys Pro Asp Pro Leu Thr Gln				
3830		3835		3840
Leu Val Thr Thr Phe Cys Arg Gly Ala Met Thr Glu Arg Ser Gly				
3845		3850		3855
Ala Leu Gln Glu Asp Pro Leu Tyr Met Ser Tyr Ala His Ile Ile				
3860		3865		3870
Ala Lys Ser Cys Gly Glu Glu Glu Glu Glu Gly Gly Gly Glu Glu				
3875		3880		3885
Glu Glu Gly Gly Gly Glu Ala Glu Ala Glu Asp Glu Gly Arg Ala				
3890		3895		3900
Ser Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His				
3905		3910		3915
Gln Ala Arg Leu Ala Asp Arg Gly Val Ala Glu Met Val Leu Leu				
3920		3925		3930
His Ile Ser Ala Ser Lys Gly Leu Pro Ser Glu Met Val Met Lys				
3935		3940		3945
Thr Leu Gln Leu Gly Ile Ser Ile Leu Arg Gly Gly Asn Ile Asp				
3950		3955		3960
Ile Gln Met Gly Met Leu Asn His Leu Lys Asp Lys Lys Asp Val				
3965		3970		3975
Gly Phe Phe Thr Ser Ile Ala Gly Leu Met Asn Ser Cys Ser Val				
3980		3985		3990
Leu Asp Leu Asp Ala Phe Glu Arg Asn Thr Lys Ala Glu Gly Leu				
3995		4000		4005
Gly Val Gly Leu Glu Gly Ala Ala Gly Glu Lys Asn Met His Asp				
4010		4015		4020
Ala Glu Phe Thr Cys Ala Leu Phe Arg Phe Ile Gln Leu Thr Cys				
4025		4030		4035
Glu Gly His Asn Leu Asp Trp Gln Asn Tyr Leu Arg Thr Gln Ala				
4040		4045		4050
Gly Asn Thr Ala Ala Val Asn Val Val Ile Cys Thr Val Asp Tyr				
4055		4060		4065
Leu Leu Arg Leu Gln Glu Ser Ile Met Asp Phe Tyr Trp His Tyr				
4070		4075		4080
Ser Ser Lys Glu Leu Ile Asp Pro Ala Gly Lys Ala Asn Phe Phe				

4085	4090	4095
Lys Ala Ile Gly Val Ala Ser 4100	Gln Val Phe Asn Thr 4105	Leu Thr Glu 4110
Val Ile Gln Gly Pro Cys Thr 4115	Gln Asn Gln Gln Ala 4120	Leu Ala His 4125
Ser Arg Leu Trp Asp Ala Val 4130	Gly Gly Phe Leu Phe 4135	Leu Phe Ser 4140
His Met Gln Asp Lys Leu Ser 4145	Lys His Ser Ser Gln 4150	Val Asp Leu 4155
Leu Lys Glu Leu Leu Asn Leu 4160	Gln Lys Asp Met Ile 4165	Thr Met Met 4170
Leu Ser Met Leu Glu Gly Asn 4175	Val Val Asn Gly Thr 4180	Ile Gly Lys 4185
Gln Met Val Asp Thr Leu Val 4190	Glu Ser Ala Ser Asn 4195	Val Glu Leu 4200
Ile Leu Lys Tyr Phe Asp Met 4205	Phe Leu Lys Leu Lys 4210	Asp Leu Thr 4215
Ser Ser Ala Ser Phe Gln Glu 4220	Ile Asp Ala Asn Asn 4225	Asp Gly Trp 4230
Val Leu Pro Lys Asp Phe Lys 4235	Glu Lys Met Glu Gln 4240	Gln Lys Ser 4245
Tyr Thr Pro Glu Glu Ile Glu 4250	Phe Leu Leu Ala Cys 4255	Cys Glu Thr 4260
Asn His Asp Gly Lys Leu Asp 4265	Tyr Ile Gly Phe Cys 4270	Asp Arg Phe 4275
His Glu Pro Ala Lys Glu Ile 4280	Gly Phe Asn Leu Ala 4285	Val Leu Leu 4290
Thr Asn Leu Ser Glu His Met 4295	Pro Asn Glu Pro Arg 4300	Leu Ala Arg 4305
Phe Leu Glu Thr Ala Gly Ser 4310	Val Leu Asn Tyr Phe 4315	Glu Pro Phe 4320
Leu Gly Arg Ile Glu Ile Met 4325	Gly Gly Ser Lys Arg 4330	Ile Glu Arg 4335
Val Tyr Phe Glu Ile Lys Glu 4340	Ser Asn Ile Glu Gln 4345	Trp Glu Lys 4350
Pro Gln Ile Lys Glu Ser Lys 4355	Arg Ala Phe Phe Tyr 4360	Ser Ile Val 4365
Thr Glu Gly Gly Asp Lys Glu 4370	Lys Leu Glu Ala Phe 4375	Val Asn Phe 4380
Cys Glu Asp Ala Ile Phe Glu	Met Thr His Ala Ser	Gly Leu Met



4385		4390		4395
Ala Ala Ser Glu Glu Ser Val Gly Gly Thr Lys Asn Arg Glu Ala				
4400		4405		4410
Ser Tyr Met Tyr Met Gly Asp Asp Asp Asp Glu Arg Ala Gly Lys				
4415		4420		4425
Asp Pro Phe Arg Arg Gly Leu Gln Ser Val Lys Asp Gly Val Ala				
4430		4435		4440
Thr Ala Phe Ser Ser Leu Ser Pro Ser Asn Ile Lys Ala Lys Ile				
4445		4450		4455
Ala Asp Met Gln Gln Met Pro Pro Ala Glu Leu Ala Val Gly Phe				
4460		4465		4470
Phe Lys Met Phe Phe Tyr Leu Phe Tyr Tyr Leu Gly Tyr Gly Val				
4475		4480		4485
Leu Val Val Val Arg Tyr Ile Phe Gly Val Leu Leu Gly Leu Met				
4490		4495		4500
Arg Gly Pro Gln Thr Asp Glu Pro Pro Pro Glu Pro Thr Glu Glu				
4505		4510		4515
Glu Lys Ile Gly Gln Leu Arg His Arg Leu Leu Ala Thr Gln Ser				
4520		4525		4530
Ser Arg His Leu Pro Ala Leu Pro Pro Ala Asp Asp Thr Gly Gln				
4535		4540		4545
Met Gln Val Ser Ala Phe Gly Leu Asp Ile Thr Lys Glu Gly Asn				
4550		4555		4560
Gly Gln Ile Gln Val Lys Pro His Glu Ser Pro Ser Thr Ser Thr				
4565		4570		4575
Pro Ser Ser Gly Glu Glu Ala Glu Val Ser Pro Asp Glu Ser Ala				
4580		4585		4590
Asp His Thr Glu Glu Gln Arg Pro Pro Ser Leu Ile Asp Leu Leu				
4595		4600		4605
Gly Gly Glu Gln Ala Lys Lys Gln Ala Gln Glu Arg Met Glu Ala				
4610		4615		4620
Gln Ala Ala Gln Gln Ala Ala Met Ser Ala Ile Glu Ala Glu Ser				
4625		4630		4635
Lys Lys Ala Val Gln Gly Pro Ala Pro Ser Ala Leu Ser Gln Val				
4640		4645		4650
Asp Leu Ser Gln Tyr Thr Arg Arg Val Val Ser Phe Leu Ala Arg				
4655		4660		4665
Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu Ala Phe Cys				
4670		4675		4680
Ile Asn Phe Val Leu Leu Phe Tyr Lys Val Ser Thr Leu Asp Gly				

4685					4690					4695				
Glu Gly	Gly Glu	Gly Ser	Gly Ser	Gly	Gly	Leu Gly	Asp Ile	Ile	Ala Gly	Gly				
4700					4705			4710						
Gly Ser	Gly Ser	Gly Ala	Gly	Ser Gly	Ser Gly	Asp	Gly Ser	Gly						
4715			4720			4725								
Glu Ser	Gly Glu	Asp Asp	Asp	Ala Leu	Glu Val	Val	His Ile	Asp						
4730			4735			4740								
Glu Asp	Phe Phe	Tyr Met	Glu	His Val	Ile Lys	Met	Ala Ala	Val						
4745			4750			4755								
Leu His	Ser Ile	Val Ser	Leu	Ala Ile	Leu Ile	Gly	Tyr Tyr	His						
4760			4765			4770								
Leu Lys	Val Pro	Leu Ala	Ile	Phe Lys	Arg Glu	Lys	Glu Ile	Ala						
4775			4780			4785								
Arg Lys	Leu Glu	Phe Asp	Gly	Leu Tyr	Ile Ala	Glu	Gln Pro	Glu						
4790			4795			4800								
Asp Asp	Asp Leu	Lys Ser	His	Trp Asp	Lys Leu	Val	Ile Ser	Ala						
4805			4810			4815								
Lys Ser	Phe Pro	Val Asn	Tyr	Trp Asp	Lys Phe	Val	Lys Lys	Lys						
4820			4825			4830								
Val Arg	Ala Lys	Tyr Ser	Glu	Thr Tyr	Asp Phe	Asp	Ser Ile	Ser						
4835			4840			4845								
Asn Met	Leu Gly	Met Glu	Lys	Thr Ser	Phe Ser	Ala	Gln Glu	Glu						
4850			4855			4860								
Glu Gly	Ser Lys	Gly Leu	Ile	His Tyr	Ile Ile	Asn	Ile Asp	Trp						
4865			4870			4875								
Arg Tyr	Gln Val	Trp Lys	Ala	Gly Val	Thr Ile	Thr	Asp Asn	Ser						
4880			4885			4890								
Phe Leu	Tyr Ser	Leu Trp	Tyr	Phe Ser	Phe Ser	Val	Met Gly	Asn						
4895			4900			4905								
Phe Asn	Asn Phe	Phe Phe	Ala	Ala His	Leu Leu	Asp	Val Ala	Val						
4910			4915			4920								
Gly Phe	Lys Thr	Leu Arg	Thr	Ile Leu	Gln Ser	Val	Thr His	Asn						
4925			4930			4935								
Gly Lys	Gln Leu	Val Leu	Thr	Val Met	Leu Leu	Thr	Ile Ile	Val						
4940			4945			4950								
Tyr Ile	Tyr Thr	Val Ile	Ala	Phe Asn	Phe Phe	Arg	Lys Phe	Tyr						
4955			4960			4965								
Val Gln	Glu Glu	Asp Asp	Glu	Val Asn	Arg Asn	Cys	His Asp	Met						
4970			4975			4980								
Leu Thr	Cys Phe	Val Phe	Asn	Leu Tyr	Lys Gly	Val	Arg Ala	Gly						

4985	4990	4995
Gly Gly Ile Gly Asp Glu Leu Glu Pro Pro Asp Gly Asp Asp Ser 5000 5005 5010		
Glu Val Tyr Arg Ile Ile Phe Asp Ile Ser Leu Phe Phe Phe Ile 5015 5020 5025		
Ile Val Ile Leu Leu Ala Ile Leu Gln Gly Leu Ile Ile Asp Ala 5030 5035 5040		
Phe Gly Glu Leu Arg Asp Gln Leu Glu Ser Val Lys Glu Asp Met 5045 5050 5055		
Glu Ser Asn Cys Phe Ile Cys Gly Ile Asn Lys Asp Tyr Phe Asp 5060 5065 5070		
Lys Val Pro His Gly Phe Asp Thr His Val Gln Arg Glu His Asn 5075 5080 5085		
Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile Asn Lys Pro 5090 5095 5100		
Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp Asn Met Tyr 5105 5110 5115		
Thr Gln Arg Cys Trp Asp Phe Phe Pro Val Gly Asp Cys Phe Arg 5120 5125 5130		
Lys Gln Tyr Glu Asp Leu Met Gly Glu 5135 5140		

<210> 145  
 <211> 15303  
 <212> DNA  
 <213> *Heliothis virescens*

<220>  
 <221> CDS  
 <222> (1) .. (15300)  
 <223>

<220>  
 <223> pXL-Hv6

<400> 145	
atg gcg gaa gca gag ggg gga gca agc gag caa gat gat gtt tca ttc Met Ala Glu Ala Glu Gly Gly Ala Ser Glu Gln Asp Asp Val Ser Phe 1 5 10 15	48
ttg cgt acg gaa gac atg gtg tgc ctg tcg tgc aca gcg aca gga gag Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu 20 25 30	96
agg gtg tgc ctg gct gcc gaa ggt ttc ggc aac cgg cac tgc ttc ctg Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu 35 40 45	144
gag aat att gcc gac aag aac ata ccg cct gat ctg tcg cag tgt gtg	192

Glu	Asn	Ile	Ala	Asp	Lys	Asn	Ile	Pro	Pro	Asp	Leu	Ser	Gln	Cys	Val		
50						55					60						
ttt	gtc	atc	gaa	cag	gcg	ctt	tca	gta	aga	gct	tta	caa	gag	ttg	gta	240	
Phe	Val	Ile	Glu	Gln	Ala	Leu	Ser	Val	Arg	Ala	Leu	Gln	Glu	Leu	Val		
65					70					75					80		
acg	gct	gcg	ggg	tct	gaa	act	ggg	aaa	gaa	aac	tta	ggg	aaa	ggg	acc	288	
Thr	Ala	Ala	Gly	Ser	Glu	Thr	Gly	Lys	Glu	Asn	Leu	Gly	Lys	Gly	Thr		
				85					90					95			
ggg	tct	ggg	cat	cgt	acg	cta	tta	tac	ggc	aat	gct	att	ctt	ttg	cga	336	
Gly	Ser	Gly	His	Arg	Thr	Leu	Leu	Tyr	Gly	Asn	Ala	Ile	Leu	Leu	Arg		
			100					105					110				
cat	ctt	aac	agt	gat	atg	tac	ctg	gcc	tgc	ctg	tcg	aca	tca	tca	tcc	384	
His	Leu	Asn	Ser	Asp	Met	Tyr	Leu	Ala	Cys	Leu	Ser	Thr	Ser	Ser	Ser		
		115					120					125					
caa	gat	aag	ctg	gcc	ttt	gac	gtg	ggg	ctg	caa	cag	cac	tcc	cag	ggg	432	
Gln	Asp	Lys	Leu	Ala	Phe	Asp	Val	Gly	Leu	Gln	Gln	His	Ser	Gln	Gly		
	130					135					140						
gaa	gcc	tgc	tgg	tgg	acc	ctg	cat	cct	gcc	agc	aaa	cag	aga	tcc	gag	480	
Glu	Ala	Cys	Trp	Trp	Thr	Leu	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu		
145					150					155					160		
ggg	gag	aag	gtg	cga	gtc	gga	gat	gac	ttg	att	ctt	gtc	tcc	gtg	gcc	528	
Gly	Glu	Lys	Val	Arg	Val	Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ala		
				165					170					175			
act	gag	aga	tac	ttg	cac	aca	acg	aaa	gag	aac	gaa	gta	tcg	ata	gtg	576	
Thr	Glu	Arg	Tyr	Leu	His	Thr	Thr	Lys	Glu	Asn	Glu	Val	Ser	Ile	Val		
			180					185					190				
aac	gcg	tcg	ttc	cac	gtg	acc	cac	tgg	tcg	gta	cag	ccc	tat	ggc	act	624	
Asn	Ala	Ser	Phe	His	Val	Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr		
		195					200					205					
ggg	ata	tcg	agg	atg	aag	tat	gta	ggc	tat	gtg	ttc	gga	ggg	gat	gtg	672	
Gly	Ile	Ser	Arg	Met	Lys	Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val		
	210					215					220						
ctg	agg	ttc	ttc	cat	gga	ggg	gac	gag	tgt	ctc	act	ata	cct	agt	acc	720	
Leu	Arg	Phe	Phe	His	Gly	Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr		
225					230					235					240		
tgg	aca	aag	gat	ggg	ggg	caa	aat	atc	gta	gtg	tac	gaa	gga	ggg	tca	768	
Trp	Thr	Lys	Asp	Gly	Gly	Gln	Asn	Ile	Val	Val	Tyr	Glu	Gly	Gly	Ser		
				245					250					255			
gtg	atg	tct	caa	gcc	cgt	tct	ctt	tgg	cgc	ctg	gag	ctg	gct	aga	acc	816	
Val	Met	Ser	Gln	Ala	Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr		
			260					265					270				
aag	tgg	gcc	gga	ggg	ttc	att	aac	tgg	tac	cat	cct	atg	agg	att	cgg	864	
Lys	Trp	Ala	Gly	Gly	Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg		
		275					280					285					
cac	atc	act	act	gga	aga	tat	ctt	gga	gtt	aac	gac	cag	aat	gaa	ctg	912	

His	Ile	Thr	Thr	Gly	Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu	
290						295					300					
tat	tta	gtt	agc	aga	gag	gaa	gcc	aca	aca	gct	tct	tgt	gcc	ttc	tgc	960
Tyr	Leu	Val	Ser	Arg	Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys	
305					310					315					320	
ctg	cgt	cag	gag	aag	gat	gat	cag	aag	caa	gtg	tta	gaa	gac	aag	gac	1008
Leu	Arg	Gln	Glu	Lys	Asp	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp	
				325					330					335		
ttg	gag	gtc	ata	ggc	gct	ccc	atc	atc	aaa	tat	ggg	gac	tcc	acc	gtc	1056
Leu	Glu	Val	Ile	Gly	Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	
			340					345					350			
att	gtg	cag	cat	tcc	gag	act	ggc	ttg	tgg	ctg	tct	tat	aag	tct	tac	1104
Ile	Val	Gln	His	Ser	Glu	Thr	Gly	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	
		355					360					365				
gaa	acg	aag	aag	aag	gga	gtg	ggg	aaa	gta	gaa	gag	aag	caa	gcg	att	1152
Glu	Thr	Lys	Lys	Lys	Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	
	370					375					380					
ctc	cac	gag	gaa	ggc	aag	atg	gac	gat	ggc	ctc	gac	ttc	tcc	agg	tca	1200
Leu	His	Glu	Glu	Gly	Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser	
385					390					395					400	
cag	gag	gaa	gaa	tct	agg	act	gct	cga	gtt	atc	agg	aag	tgt	tct	tcg	1248
Gln	Glu	Glu	Glu	Ser	Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	
				405					410					415		
ctg	ttc	act	aag	ttt	atc	aat	ggg	ctt	gaa	act	cta	caa	gag	aac	cgt	1296
Leu	Phe	Thr	Lys	Phe	Ile	Asn	Gly	Leu	Glu	Thr	Leu	Gln	Glu	Asn	Arg	
			420					425					430			
cgt	cac	tcg	atg	ttc	ttc	gcg	tca	gtg	aac	ctg	ggg	gag	atg	gtg	atg	1344
Arg	His	Ser	Met	Phe	Phe	Ala	Ser	Val	Asn	Leu	Gly	Glu	Met	Val	Met	
		435					440					445				
tgc	ctc	gag	gat	ctc	atc	aac	tac	ttc	gca	cag	cca	gat	gaa	gat	atg	1392
Cys	Leu	Glu	Asp	Leu	Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Asp	Glu	Asp	Met	
	450					455					460					
gaa	cac	gaa	gaa	aag	caa	aac	aaa	ttc	cgc	gcc	ctc	cgc	aac	cgt	cag	1440
Glu	His	Glu	Glu	Lys	Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	
465					470					475					480	
gac	ctg	ttc	caa	gag	gaa	ggc	ata	ctg	aac	ctg	atc	ctc	gaa	gct	ata	1488
Asp	Leu	Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	
				485					490					495		
gac	aag	atc	aac	gtc	atc	aca	tcc	cag	ggg	ttc	ctc	gct	ggg	ttc	ctg	1536
Asp	Lys	Ile	Asn	Val	Ile	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu	
			500					505					510			
gca	gga	gac	gaa	tct	gga	caa	agc	tgg	gaa	atg	ata	tct	gga	tat	ttg	1584
Ala	Gly	Asp	Glu	Ser	Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu	
		515					520					525				
tat	cag	ttg	ctg	gcg	gca	ata	ata	aaa	ggc	aac	cac	acg	aac	tgc	gcg	1632

Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala		
530						535					540						
cag	ttc	gcg	aac	tcg	aac	cgg	ctc	aac	tgg	ctg	ttc	tcg	cgc	ctc	ggc	1680	
Gln	Phe	Ala	Asn	Ser	Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly		
545					550					555					560		
tcg	cag	gcc	tcg	ggc	gag	ggc	acc	ggc	atg	ctc	gac	gtg	ctg	cac	tgc	1728	
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys		
				565					570						575		
gtc	ctc	ata	gac	tcg	cct	gaa	gcg	ctc	aat	atg	atg	cgg	gac	gaa	cac	1776	
Val	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His		
			580					585					590				
ata	aaa	gtg	ata	att	tct	cta	tta	gaa	aag	cat	ggg	cgc	gac	cca	aaa	1824	
Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys		
		595					600					605					
gta	cta	gat	gtg	cta	tgt	tca	ctc	tgc	gtc	ggg	aac	ggc	gtc	gcg	gtg	1872	
Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val		
	610					615					620						
cgc	tcg	tca	cag	aac	aac	atc	tgc	gac	tac	ttg	ctg	ccc	ggc	aag	aac	1920	
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn		
625					630					635					640		
ctg	ttg	ctg	caa	act	gcg	ctt	gta	gat	cac	gta	tct	agt	gtc	cgt	ccg	1968	
Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro		
				645					650					655			
aac	atc	ttc	gtg	ggg	cga	gta	gaa	ggg	tca	gcc	gtg	tac	cgc	aaa	tgg	2016	
Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp		
			660					665					670				
tac	ttc	gaa	gtg	act	atg	gac	cac	ata	gag	aag	acc	aca	cat	atg	atg	2064	
Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met		
		675					680					685					
cca	cat	cta	cgc	ata	gga	tgg	gct	aac	act	act	ggc	tac	gtc	cca	tac	2112	
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr		
		690				695					700						
ccg	ggc	ggg	ggc	gag	aag	tgg	gga	ggg	aac	ggc	gtg	gga	gac	gac	ctg	2160	
Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu		
705					710					715					720		
tac	tcg	tac	ggg	ctc	gac	ggc	gcc	tac	ctc	tgg	tcc	ggc	ggg	agg	aag	2208	
Tyr	Ser	Tyr	Gly	Leu	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys		
				725					730					735			
act	ccc	ggt	aat	agg	act	cat	gct	gaa	gag	cct	tat	att	agg	aaa	ggg	2256	
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly		
			740					745					750				
gac	gtg	ata	ggg	tgt	gca	ttg	gac	ctg	acg	gta	ccc	ata	atc	aac	ttc	2304	
Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe		
		755					760					765					
atg	ttc	aac	gga	gtg	cgg	gtg	acg	gga	tcc	ttc	acc	aac	ttc	aac	ctg	2352	

Met	Phe	Asn	Gly	Val	Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	
	770					775					780					
gaa	ggc	atg	ttc	ttc	ccg	gtc	atc	agt	tgc	tct	agt	aaa	ttg	agt	tgt	2400
Glu	Gly	Met	Phe	Phe	Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	
785					790				795						800	
cgg	ttc	ctg	cta	ggc	ggg	gaa	cac	ggg	aga	ctc	cgg	tac	gcg	gct	cca	2448
Arg	Phe	Leu	Leu	Gly	Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro	
				805					810						815	
gaa	ggc	tac	tcc	cca	ctg	gtg	gag	tct	ctc	ctg	ccg	cag	cag	atc	ctc	2496
Glu	Gly	Tyr	Ser	Pro	Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	
			820					825								
agc	ctg	gag	ccg	tgc	ttc	tac	ttc	ggc	aac	ctg	tcc	aag	cgg	gcc	ctg	2544
Ser	Leu		Pro	Cys	Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	
	835						840					845				
gct	gga	ccc	ccg	cta	gta	cag	gac	gat	acg	gct	ttt	gtg	cct	aca	cct	2592
Ala	Gly	Pro	Pro	Leu	Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	
	850					855					860					
gtt	gat	act	tta	cag	att	act	ctg	cct	aca	tat	gtg	gaa	caa	att	aga	2640
Val	Asp	Thr	Leu	Gln	Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	
865					870					875					880	
gat	aag	cta	gct	gaa	aat	ata	cac	gaa	atg	tgg	gct	atg	aat	aag	atc	2688
Asp	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	Met	Trp	Ala	Met	Asn	Lys	Ile	
				885					890						895	
gaa	gca	ggc	tgg	atg	tac	ggc	gac	cag	aga	gaa	gac	ttg	cac	aag	atc	2736
Glu	Ala	Gly	Trp	Met	Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His	Lys	Ile	
			900					905								
cac	ccc	tgc	ctc	gtg	ccc	ttc	gag	cgt	ctc	ccg	cct	gct	gag	aaa	cga	2784
His	Pro	Cys	Leu	Val	Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu	Lys	Arg	
		915					920					925				
tac	gac	ata	caa	ctc	gct	gtg	cag	aca	ctc	aag	act	atc	ctg	gct	ctg	2832
Tyr	Asp	Ile	Gln	Leu	Ala	Val	Gln	Thr	Leu	Lys	Thr	Ile	Leu	Ala	Leu	
	930					935					940					
ggc	tac	tac	atc	agc	tta	gat	aag	cct	cca	gca	cgc	atc	cgc	aac	gtt	2880
Gly	Tyr	Tyr	Ile	Ser	Leu	Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Asn	Val	
945					950					955					960	
cgt	ctg	ccc	aac	gaa	cct	ttc	atg	cag	tcc	aac	ggc	tac	aag	cca	gca	2928
Arg	Leu	Pro	Asn	Glu	Pro	Phe	Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	
				965				970							975	
cca	ctc	gat	ctg	agt	gct	gtc	acc	ctg	aca	ccc	aag	atg	gat	gag	cta	2976
Pro	Leu	Asp	Leu	Ser	Ala	Val	Thr	Leu	Thr	Pro	Lys	Met	Asp	Glu	Leu	
			980					985								
gta	gac	cag	ctg	gct	gag	aac	aca	cac	aac	ctt	tgg	gcc	agg	gag	agg	3024
Val	Asp	Gln	Leu	Ala	Glu	Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	
	995						1000					1005				
ata	cag	cag	gga	tgg	act	tac	gga	ctt	aat	gag	gac	tcg	gac	atg		3069

Ile	Gln	Gln	Gly	Trp	Thr	Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Asp	Met	
	1010					1015					1020				
cat	cgt	tcc	ccg	cac	ctg	gtg	ccg	tac	ccg	aag	gtt	gac	gat	gcc	3114
His	Arg	Ser	Pro	His	Leu	Val	Pro	Tyr	Pro	Lys	Val	Asp	Asp	Ala	
	1025					1030					1035				
atc	aag	aaa	gcc	aac	agg	gac	aca	gcc	tcg	gag	act	gtg	agg	acc	3159
Ile	Lys	Lys	Ala	Asn	Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	
	1040					1045					1050				
ctg	ctg	gtc	tac	ggg	tat	atg	ctg	gac	ccg	cct	act	ggg	gag	cag	3204
Leu	Leu	Val	Tyr	Gly	Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln	
	1055					1060					1065				
cat	gaa	gca	ctc	ttg	ttg	gaa	gcg	tca	aaa	cag	aag	caa	gca	gac	3249
His	Glu	Ala	Leu	Leu	Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp	
	1070					1075					1080				
ttc	aga	aca	tac	cgc	gct	gaa	aag	aac	tat	gcc	gtc	agc	tct	ggg	3294
Phe	Arg	Thr	Tyr	Arg	Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly	
	1085					1090					1095				
aag	tgg	tac	ttc	gag	ttt	gag	atc	cta	acg	gct	gga	cct	atg	agg	3339
Lys	Trp	Tyr	Phe	Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg	
	1100					1105					1110				
gtc	ggc	tgg	gct	cac	gct	gat	atg	gca	cca	gga	atg	atg	ctc	gga	3384
Val	Gly	Trp	Ala	His	Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly	
	1115					1120					1125				
caa	gat	gag	aac	tct	tgg	gca	ttt	gat	ggt	tac	aat	gag	gaa	aaa	3429
Gln	Asp	Glu	Asn	Ser	Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	
	1130					1135					1140				
gtg	tac	agc	ggt	aac	act	gag	tct	ttc	ggc	aag	caa	tgg	gct	gtt	3474
Val	Tyr	Ser	Gly	Asn	Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val	
	1145					1150					1155				
ggt	gac	gta	gtg	ggg	gtg	ttc	cta	gat	ctc	att	gat	aag	acg	ata	3519
Gly	Asp	Val	Val	Gly	Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile	
	1160					1165					1170				
agt	ttc	tca	ctc	aac	ggt	gag	ttg	ttg	atg	gat	gct	ctt	ggc	gga	3564
Ser	Phe	Ser	Leu	Asn	Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	
	1175					1180					1185				
gag	act	acg	ttt	gct	gat	gtc	cag	ggt	gac	aac	ttt	gta	cct	gct	3609
Glu	Thr	Thr	Phe	Ala	Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala	
	1190					1195					1200				
tgc	acg	ctt	ggt	gtg	ggc	caa	aaa	gcc	agg	tta	aca	tac	ggt	cag	3654
Cys	Thr	Leu	Gly	Val	Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	
	1205					1210					1215				
gac	gtg	aac	acg	ttg	aaa	tac	ttc	aca	aca	tgt	ggt	ctg	cag	gag	3699
Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	
	1220					1225					1230				
gga	tat	gaa	cca	ttt	tgt	gtc	aat	atg	aag	aga	gac	gtg	act	cac	3744



Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His	
1235						1240					1245				
tgg	tat	act	aaa	gat	cag	cca	atc	ttc	gag	aat	act	gat	gag	atg	3789
Trp	Tyr	Thr	Lys	Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met	
1250						1255					1260				
atc	gac	acc	aga	att	gat	gtc	acc	agg	ata	cca	gct	ggg	tca	gat	3834
Ile	Asp	Thr	Arg	Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	
1265						1270					1275				
aca	cct	cca	tgc	ctc	aag	att	tcc	cac	aac	acg	ttc	gag	acg	atg	3879
Thr	Pro	Pro	Cys	Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	
1280						1285					1290				
gag	aaa	gct	aac	tgg	gag	ttc	tta	cgt	ctc	tca	ctg	cct	gtc	atc	3924
Glu	Lys	Ala	Asn	Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	
1295						1300					1305				
tgc	cat	aac	gag	ttc	att	gac	gag	gca	gaa	aaa	gcc	aga	cgt	tgg	3969
Cys	His	Asn	Glu	Phe	Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp	
1310						1315					1320				
gta	gaa	atc	aag	gac	cgc	caa	cag	att	tta	atg	aaa	gag	gca	gtt	4014
Val	Glu	Ile	Lys	Asp	Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	
1325						1330					1335				
gaa	gct	cag	atg	cct	gcc	cat	att	gac	cag	atc	atg	agg	agt	ggg	4059
Glu	Ala	Gln	Met	Pro	Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly	
1340						1345					1350				
ttc	acc	atg	aac	gat	atc	aaa	ggg	ttg	cac	tac	gaa	gac	aat	cag	4104
Phe	Thr	Met	Asn	Asp	Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln	
1355						1360					1365				
gaa	gag	ttg	ccc	agc	tcc	aag	atg	aag	cgc	ctg	cct	tca	agg	cca	4149
Glu	Glu	Leu	Pro	Ser	Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro	
1370						1375					1380				
cca	cgt	aag	gga	tcc	atg	acc	aga	ggg	caa	gtc	aac	ggc	atg	cac	4194
Pro	Arg	Lys	Gly	Ser	Met	Thr	Arg	Gly	Gln	Val	Asn	Gly	Met	His	
1385						1390					1395				
cgg	tcg	acc	agt	gaa	gct	gaa	atg	gcc	aag	tat	gac	ttg	gga	gcg	4239
Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met	Ala	Lys	Tyr	Asp	Leu	Gly	Ala	
1400						1405					1410				
caa	ggg	ttg	acg	cct	gat	gac	aag	aag	gat	aag	agg	gga	cga	tcg	4284
Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys	Lys	Asp	Lys	Arg	Gly	Arg	Ser	
1415						1420					1425				
cct	ttc	aag	ttc	ttc	cga	agc	aag	cgc	ggc	gaa	agc	agt	gat	cgt	4329
Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys	Arg	Gly	Glu	Ser	Ser	Asp	Arg	
1430						1435					1440				
gct	aaa	tcc	cgt	aaa	tcc	aaa	aca	cca	gac	ccc	ttc	agc	gat	acc	4374
Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr	Pro	Asp	Pro	Phe	Ser	Asp	Thr	
1445						1450					1455				
gag	gta	tca	cca	gaa	cgt	ggg	gct	cga	agg	ccc	aac	cct	cag	atc	4419

Glu Val Ser Pro Glu Arg Gly Ala Arg Arg Pro Asn Pro Gln Ile	
1460 1465 1470	
aaa gtg tca cag tcg aac gct cag atg gcg acg ccc acg caa gac	4464
Lys Val Ser Gln Ser Asn Ala Gln Met Ala Thr Pro Thr Gln Asp	
1475 1480 1485	
agg aag cag atg acg acg agc act ctc gcg cag tcg gct acg gaa	4509
Arg Lys Gln Met Thr Thr Ser Thr Leu Ala Gln Ser Ala Thr Glu	
1490 1495 1500	
act gtc ggc aat gag atc ttc gat gca gag tgc ttg aag ctc atc	4554
Thr Val Gly Asn Glu Ile Phe Asp Ala Glu Cys Leu Lys Leu Ile	
1505 1510 1515	
aat gag tac ttt tat gga gtc agg atc tac cca ggt cag gac cca	4599
Asn Glu Tyr Phe Tyr Gly Val Arg Ile Tyr Pro Gly Gln Asp Pro	
1520 1525 1530	
aca cac gtg tac atc ggt tgg gtg acc acc cag tac cac ttg cac	4644
Thr His Val Tyr Ile Gly Trp Val Thr Thr Gln Tyr His Leu His	
1535 1540 1545	
tct aag gac ttc aac cag agc aag gtc acc aag tcc tct gtc atc	4689
Ser Lys Asp Phe Asn Gln Ser Lys Val Thr Lys Ser Ser Val Ile	
1550 1555 1560	
atc att gat gat tac gat agg gtt gtt gag aac gta aac cgg cag	4734
Ile Ile Asp Asp Tyr Asp Arg Val Val Glu Asn Val Asn Arg Gln	
1565 1570 1575	
tcg tgc tac atg gtg cga gct gac gag cta tac aac gag gtg atg	4779
Ser Cys Tyr Met Val Arg Ala Asp Glu Leu Tyr Asn Glu Val Met	
1580 1585 1590	
gcg gaa gcc acg gcc aag ggc gcc tcg caa ggc atg ttc atc ggc	4824
Ala Glu Ala Thr Ala Lys Gly Ala Ser Gln Gly Met Phe Ile Gly	
1595 1600 1605	
tgc tcc gtc gac acc tcc acc ggc agc gtg tcc ttc acc tgc gag	4869
Cys Ser Val Asp Thr Ser Thr Gly Ser Val Ser Phe Thr Cys Glu	
1610 1615 1620	
ggg aag gac acc agc ttc aag ttt aag atg gaa cca gaa acc aaa	4914
Gly Lys Asp Thr Ser Phe Lys Phe Lys Met Glu Pro Glu Thr Lys	
1625 1630 1635	
ctg ttc ccc gcg atc ttc gta gaa gcg acc tcc aag gag atc ctg	4959
Leu Phe Pro Ala Ile Phe Val Glu Ala Thr Ser Lys Glu Ile Leu	
1640 1645 1650	
cag ata gag ctg ggc aga tca gcc acc agc ctt cca cta tca gcc	5004
Gln Ile Glu Leu Gly Arg Ser Ala Thr Ser Leu Pro Leu Ser Ala	
1655 1660 1665	
gct gta cta cct acg agt gat aag cat gtc ata cca cag ttc ccg	5049
Ala Val Leu Pro Thr Ser Asp Lys His Val Ile Pro Gln Phe Pro	
1670 1675 1680	
ccg agg ttg aag gtg cag tgc ttg aaa cca cat cag tgg gct agg	5094

Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg		
1685						1690					1695					
gta	ccg	aac	caa	tct	cta	caa	gtg	cac	gct	ctg	aag	ttg	tcc	gac	5139	
Val	Pro	Asn	Gln	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp		
1700						1705					1710					
atc	cgc	ggc	tgg	tcg	atg	ctg	tgt	gaa	gac	gcg	gtt	tct	atg	cta	5184	
Ile	Arg	Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu		
1715						1720					1725					
gct	ttg	cat	ata	ccg	gag	gaa	gat	cgt	tgc	ata	gac	att	ttg	gag	5229	
Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu		
1730						1735					1740					
ctg	ata	gaa	atg	gac	aaa	ctt	tta	agt	ttc	cat	tct	cac	acc	ctc	5274	
Leu	Ile	Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu		
1745						1750					1755					
acg	tta	tac	gct	gct	tta	tgt	tac	cag	agt	aac	tac	agg	gcg	gcc	5319	
Thr	Leu	Tyr	Ala	Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala		
1760						1765					1770					
cac	gct	ctg	tgc	acg	cac	gtg	gac	cag	aag	cag	ctg	ctg	tac	gcg	5364	
His	Ala	Leu	Cys	Thr	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala		
1775						1780					1785					
atc	cag	tcg	cag	tac	atg	tcg	ggc	ccg	ctg	cgc	cag	ggc	ttc	tac	5409	
Ile	Gln	Ser	Gln	Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr		
1790						1795					1800					
gat	ctg	ctc	ata	gcg	ctg	cat	ctc	gag	tcg	cat	gcc	acc	acc	atg	5454	
Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met		
1805						1810					1815					
gag	gcg	tgt	aag	aac	gag	ttc	gtg	atc	ccg	ctg	ggc	ccg	gag	ctg	5499	
Glu	Ala	Cys	Lys	Asn	Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu		
1820						1825					1830					
aag	gcg	ctg	tac	gag	gag	ccc	gac	atg	gga	cac	tcg	ctg	cgc	tcg	5544	
Lys	Ala	Leu	Tyr	Glu	Glu	Pro	Asp	Met	Gly	His	Ser	Leu	Arg	Ser		
1835						1840					1845					
ctg	cag	acc	gag	agc	gtg	cgc	ccg	cag	atg	aag	atg	acc	gat	atc	5589	
Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile		
1850						1855					1860					
gct	gaa	agt	ata	acc	gag	atc	agc	aac	ctg	tac	tcg	ccg	tac	ttc	5634	
Ala	Glu	Ser	Ile	Thr	Glu	Ile	Ser	Asn	Leu	Tyr	Ser	Pro	Tyr	Phe		
1865						1870					1875					
ccg	ctg	gag	gtg	gta	cgc	gag	ttc	gtg	atg	cag	gcg	ctg	gct	gaa	5679	
Pro	Leu	Glu	Val	Val	Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu		
1880						1885					1890					
gct	gtg	gag	acc	aac	cag	gtg	cac	aac	cgg	gat	cct	gta	ggg	ggg	5724	
Ala	Val	Glu	Thr	Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Val	Gly	Gly		
1895						1900					1905					
agc	aat	gag	aac	ctg	ttc	ctg	cct	cta	ata	aag	ttg	gtg	gac	cgt	5769	

Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg	
1910						1915					1920				
ctc	ctg	ctg	gtc	ggc	atg	atg	cgc	gac	gag	gat	gtg	gag	aag	cta	5814
Leu	Leu	Leu	Val	Gly	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu	
1925						1930					1935				
ctc	atc	atg	acc	aac	cct	gag	aca	tgg	gac	ccc	tcg	ttt	gat	aaa	5859
Leu	Ile	Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	
1940						1945					1950				
gag	ggt	aaa	gac	gag	cac	cgc	aaa	ggt	cta	ctc	cac	atg	aaa	atg	5904
Glu	Gly	Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	
1955						1960					1965				
gcg	gaa	ggc	gct	aag	ctg	cag	atg	tgt	tac	tta	ctg	caa	cat	ctc	5949
Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	
1970						1975					1980				
aac	gac	ata	cag	ctg	cgg	cac	agg	gtc	gaa	gct	atc	att	gcg	ttt	5994
Asn	Asp	Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	
1985						1990					1995				
gcg	cat	gac	ttc	gtc	ggt	gat	cta	caa	act	gat	cag	ctc	aga	cgt	6039
Ala	His	Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	
2000						2005					2010				
tac	acg	gaa	atc	aag	cag	tct	gat	ttg	ccg	agc	gca	gtt	gcc	gct	6084
Tyr	Thr	Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	
2015						2020					2025				
aag	aag	acc	aga	gag	ttc	cgt	tgt	ccg	cct	aga	gaa	cag	atg	aac	6129
Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	
2030						2035					2040				
gct	ata	ctg	agt	ttc	aag	cac	cta	gaa	gag	gag	gac	aag	gag	aac	6174
Ala	Ile	Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	
2045						2050					2055				
tgt	ccg	tgc	ggc	gag	gag	ctg	atc	gcg	cgc	atg	aac	gag	ttc	cac	6219
Cys	Pro	Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	
2060						2065					2070				
gac	acc	ctc	atg	gcg	cac	gtc	tcg	ctg	cac	gcg	ctg	cag	gag	cct	6264
Asp	Thr	Leu	Met	Ala	His	Val	Ser	Leu	His	Ala	Leu	Gln	Glu	Pro	
2075						2080					2085				
gat	gct	gcg	gaa	aat	caa	gaa	cca	gaa	gca	aaa	ccg	ggc	gca	ttc	6309
Asp	Ala	Ala	Glu	Asn	Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	
2090						2095					2100				
ggc	aag	tta	tac	aac	att	atc	aac	acg	gta	aag	gaa	ttg	gaa	gaa	6354
Gly	Lys	Leu	Tyr	Asn	Ile	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	
2105						2110					2115				
gaa	gct	aag	gca	att	gaa	gag	cct	ccg	aag	aag	acg	cct	gag	gag	6399
Glu	Ala	Lys	Ala	Ile	Glu	Glu	Pro	Pro	Lys	Lys	Thr	Pro	Glu	Glu	
2120						2125					2130				
aag	ttc	cgt	aag	gtc	ctc	atc	cag	acc	ata	gtg	aac	tgg	gct	gag	6444

Lys	Phe	Arg	Lys	Val	Leu	Ile	Gln	Thr	Ile	Val	Asn	Trp	Ala	Glu	
2135						2140					2145				
gag	tcg	cag	ata	gaa	aca	ccc	aaa	ctc	gtc	aga	gaa	atg	ttc	agc	6489
Glu	Ser	Gln	Ile	Glu	Thr	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	
2150						2155					2160				
ctt	cta	gtc	cgc	cag	tac	gac	gca	gta	ggg	gag	ctg	atc	cgc	gct	6534
Leu	Leu	Val	Arg	Gln	Tyr	Asp	Ala	Val	Gly	Glu	Leu	Ile	Arg	Ala	
2165						2170					2175				
cta	gag	aag	aca	tac	gtc	atc	aac	gcg	aag	acc	aag	tta	gat	gtc	6579
Leu	Glu	Lys	Thr	Tyr	Val	Ile	Asn	Ala	Lys	Thr	Lys	Leu	Asp	Val	
2180						2185					2190				
gcg	gag	atg	tgg	gtg	ggg	ctc	agc	cag	atc	cga	gcc	ctc	ctg	ccg	6624
Ala	Glu	Met	Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	
2195						2200					2205				
gtg	cag	atg	agc	cag	gag	gaa	gag	gaa	ctc	atg	agg	aag	agg	ctc	6669
Val	Gln	Met	Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	
2210						2215					2220				
tgg	aaa	ctt	gtg	aac	aac	cat	acg	ttc	ttc	cag	cat	cca	gat	tta	6714
Trp	Lys	Leu	Val	Asn	Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	
2225						2230					2235				
atc	agg	gtg	ctc	cgc	gtg	cac	gag	aac	gtg	atg	gcg	gtg	atg	atg	6759
Ile	Arg	Val	Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	
2240						2245					2250				
aac	acg	ctc	ggc	cgc	cgc	gcg	cag	gcg	cag	tcc	gac	gcg	cag	ccc	6804
Asn	Thr	Leu	Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Gln	Pro	
2255						2260					2265				
tcc	tca	cag	cct	gtc	gca	gag	gac	aac	aag	gag	aag	gac	aca	tca	6849
Ser	Ser	Gln	Pro	Val	Ala	Glu	Asp	Asn	Lys	Glu	Lys	Asp	Thr	Ser	
2270						2275					2280				
cac	gag	atg	gtg	gta	gct	tgc	tgc	cgt	ttc	ctc	tgc	tac	ttc	tgc	6894
His	Glu	Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	
2285						2290					2295				
cgc	acc	ggg	aga	cag	aac	cag	aag	gcc	atg	ttc	gac	cac	ttc	gac	6939
Arg	Thr	Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	
2300						2305					2310				
ttc	ctc	ctg	gag	aac	tcc	aac	atc	ttg	ctg	tcc	aga	cct	tcg	ctg	6984
Phe	Leu	Leu	Glu	Asn	Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	
2315						2320					2325				
aga	gga	tcc	acg	cct	ctg	gac	gtg	gct	tac	tcc	agt	ctt	atg	gag	7029
Arg	Gly	Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	
2330						2335					2340				
aat	act	gaa	ctg	gcc	ctg	gct	ttg	aga	gag	cat	tac	ctg	gag	aag	7074
Asn	Thr	Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	
2345						2350					2355				
ata	gca	gtg	tac	ctg	tcc	cgc	tgc	ggc	ctg	cag	agc	aac	tcg	gag	7119

Ile	Ala	Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu		
2360						2365					2370					
ctg	gtg	gag	aag	ggg	tac	cct	gac	ctc	ggc	tgg	gat	cca	gtc	gag	7164	
Leu	Val	Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu		
2375						2380					2385					
ggg	gag	cgg	tat	ctt	gac	ttc	ctg	agg	ttc	tgt	gtt	tgg	gta	aac	7209	
Gly	Glu	Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn		
2390						2395					2400					
ggg	gaa	agc	gta	gaa	gaa	aac	gcg	aat	ctg	gtg	atc	cgt	ctg	ctg	7254	
Gly	Glu	Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu		
2405						2410					2415					
atc	cgt	cgt	ccg	gag	tgc	ctc	ggg	ccg	gcg	ctg	cgc	ggc	gag	ggc	7299	
Ile	Arg	Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly		
2420						2425					2430					
gag	ggc	ctg	ctg	aag	gcc	atc	gtc	gac	gcc	aac	aag	atg	agc	gag	7344	
Glu	Gly	Leu	Leu	Lys	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu		
2435						2440					2445					
agg	atc	gcc	gac	agg	agg	aag	ctc	agg	gaa	atg	gag	cag	gag	gga	7389	
Arg	Ile	Ala	Asp	Arg	Arg	Lys	Leu	Arg	Glu	Met	Glu	Gln	Glu	Gly		
2450						2455					2460					
gat	gtt	aac	ttc	agc	cac	cct	ctc	ccg	gag	tcg	gat	gag	gat	gag	7434	
Asp	Val	Asn	Phe	Ser	His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu		
2465						2470					2475					
gac	tac	atc	gac	acg	ggc	gcc	gcc	atc	ttg	aac	ttc	tac	tgt	acg	7479	
Asp	Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr		
2480						2485					2490					
ttg	gta	gat	ctg	ctc	gga	aga	tgt	gct	cct	gat	gct	ggc	gtt	att	7524	
Leu	Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Gly	Val	Ile		
2495						2500					2505					
gct	ctc	ggc	aag	aac	gag	tct	ctc	cgt	gcc	cgc	gct	atc	ctg	cgg	7569	
Ala	Leu	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg		
2510						2515					2520					
tcg	ctg	gtg	ccg	ctg	gag	gac	ctg	cag	gga	gtg	ctg	agc	ctg	cgc	7614	
Ser	Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Arg		
2525						2530					2535					
ttc	acg	ctc	aac	aac	cct	gct	gct	gga	gag	gaa	cga	ccc	aag	tct	7659	
Phe	Thr	Leu	Asn	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	Ser		
2540						2545					2550					
gat	atg	cca	tcg	ggt	cta	atc	ccg	gga	cac	aag	cag	agc	gtg	gga	7704	
Asp	Met	Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	Gly		
2555						2560					2565					
ctg	ttc	ctg	gag	aga	gtg	tat	ggc	atc	gaa	act	cag	gag	ttg	ttc	7749	
Leu	Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	Phe		
2570						2575					2580					
tac	aaa	ctg	ctg	gag	gaa	gcc	ttc	ctg	cca	gac	ctt	agg	gct	gcc	7794	

Tyr	Lys	Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala		
2585						2590					2595					
act	atg	ctg	gac	agg	aac	gac	ggc	tgc	gag	tca	gac	atg	gcc	ctg	7839	
Thr	Met	Leu	Asp	Arg	Asn	Asp	Gly	Cys	Glu	Ser	Asp	Met	Ala	Leu		
2600						2605					2610					
tcg	atg	aac	cgc	tac	atc	ggc	aac	tcg	atc	ctg	ccg	ctg	ctg	atc	7884	
Ser	Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile		
2615						2620					2625					
aag	cac	gcg	tac	ttc	tac	aac	gaa	gct	gag	aac	tac	gcc	agt	tta	7929	
Lys	His	Ala	Tyr	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu		
2630						2635					2640					
ctg	gat	gcc	acg	cta	cat	act	gtt	tat	agg	tta	tcg	aag	aac	cgc	7974	
Leu	Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg		
2645						2650					2655					
atg	tta	acc	aag	ggc	caa	cgt	gaa	gcg	gtg	tca	gac	ttc	ctc	gtg	8019	
Met	Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val		
2660						2665					2670					
gcg	ctt	act	tca	gcc	atg	cag	ccg	tct	atg	ttg	ctc	aag	ctg	ctg	8064	
Ala	Leu	Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu		
2675						2680					2685					
aga	aaa	ttg	aca	gtc	gac	gtg	tct	aaa	ctg	tcc	gag	tat	acc	act	8109	
Arg	Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr		
2690						2695					2700					
gtc	gct	ctt	agg	ctg	ctg	acg	ctg	cac	tac	gag	cgc	tgc	gcg	aag	8154	
Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys		
2705						2710					2715					
tac	tac	ggc	agc	acg	ggc	gcg	ggg	cag	ggc	gcg	ttc	ggc	gcg	tcg	8199	
Tyr	Tyr	Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser		
2720						2725					2730					
tcg	gac	gag	gag	aag	cgc	ctc	acc	atg	atg	ctc	ttc	tcc	aac	atc	8244	
Ser	Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile		
2735						2740					2745					
ttc	gac	tcg	ctc	agc	aag	atg	gac	tac	gag	ccc	gag	ctc	ttc	ggg	8289	
Phe	Asp	Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly		
2750						2755					2760					
aag	gcg	ctg	ccc	tgt	ctt	att	gct	ata	gga	tgc	gct	ctg	cct	cct	8334	
Lys	Ala	Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro		
2765						2770					2775					
gac	tac	tct	ctc	tca	aag	aac	tat	gat	gac	gag	ttt	tac	ggc	aag	8379	
Asp	Tyr	Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys		
2780						2785					2790					
gag	caa	gct	gca	ggt	gat	tta	gac	aac	cct	caa	tac	gac	cct	cag	8424	
Glu	Gln	Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln		
2795						2800					2805					
ccc	ata	aac	acg	tcc	tca	gta	gca	tta	aac	aat	gat	ctc	aac	acc	8469	

Pro	Ile	Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr	
	2810					2815					2820				
atc	gta	cag	aag	ttc	tcg	gaa	cat	tac	cac	gat	gcg	tgg	gct	agt	8514
Ile	Val	Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	
	2825					2830					2835				
agg	aag	att	gag	aac	ggc	tgg	gtg	tac	ggg	gag	ggc	tgg	tct	gat	8559
Arg	Lys	Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp	
	2840					2845					2850				
agc	cag	aag	act	cac	cct	agg	ctg	aag	cct	tat	aat	atg	ctt	aat	8604
Ser	Gln	Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	
	2855					2860					2865				
gat	tat	gaa	aaa	gag	cgt	tac	aag	gag	cca	gta	cgt	gaa	tct	ctg	8649
Asp	Tyr	Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	
	2870					2875					2880				
aag	gca	ctt	cta	gcc	atc	ggc	tgg	tct	gta	gaa	cat	tca	gaa	gta	8694
Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	
	2885					2890					2895				
gac	ata	ccg	agt	aac	aac	cga	agc	tcc	atg	aga	agg	cag	tcc	aag	8739
Asp	Ile	Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	
	2900					2905					2910				
tcg	gga	ggc	cgc	cct	ccc	gaa	att	gtg	aca	gac	tcg	gcg	act	ccg	8784
Ser	Gly	Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro	
	2915					2920					2925				
ttc	aac	tac	aac	cct	cac	cca	gtc	gac	atg	acc	aac	ttg	acg	cta	8829
Phe	Asn	Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	
	2930					2935					2940				
tcg	agg	gag	atg	cag	aac	atg	gcg	gag	agg	ctc	gct	gac	aac	gca	8874
Ser	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	
	2945					2950					2955				
cat	gac	atc	tgg	gcg	aag	aag	aag	aag	gaa	gaa	ctt	gtt	act	aat	8919
His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	
	2960					2965					2970				
gga	ggt	ggc	atc	cac	ccc	caa	cta	gta	ccc	tac	gac	ctc	cta	aca	8964
Gly	Gly	Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	
	2975					2980					2985				
gac	aaa	gaa	aag	aag	aaa	gat	cga	gaa	cgt	tct	cag	gag	ttc	ctc	9009
Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	
	2990					2995					3000				
aaa	tac	cta	cag	tac	caa	ggg	tac	aag	ctc	cac	cgg	ccc	agc	aag	9054
Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys	
	3005					3010					3015				
gcg	cca	caa	agt	gat	acg	gaa	caa	acc	act	acg	ggg	gtt	gca	ata	9099
Ala	Pro	Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	
	3020					3025					3030				
gag	ttg	aga	ttc	gca	tac	tcg	ctc	ctc	gag	aaa	ttg	atc	cag	tac	9144



Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	
	3035					3040					3045				
atc	gat	agg	gcc	acc	att	aat	atg	aag	ctt	ttg	aaa	cct	tcg	act	9189
Ile	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	
	3050					3055					3060				
aca	ttc	agt	agg	aga	agt	agt	ttt	aag	act	agt	acc	agg	gat	att	9234
Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	
	3065					3070					3075				
aag	ttc	ttt	tct	aag	gtg	gtg	ctg	cct	cta	atg	gag	aag	tat	ttc	9279
Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	
	3080					3085					3090				
tcg	acg	cat	cgt	aac	tac	ttc	ata	gct	gta	gct	acg	gcg	acg	aat	9324
Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	
	3095					3100					3105				
aat	gtt	ggg	gca	gca	agc	ctg	aag	gag	aag	gag	atg	gta	gct	gct	9369
Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	
	3110					3115					3120				
ctg	ttc	tgt	aag	ctg	gct	agc	ttg	ctt	aga	tct	aga	ctc	gca	gct	9414
Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	
	3125					3130					3135				
ttc	ggg	cct	gac	gtc	cgc	atc	aca	gtc	cgc	tgt	ctc	caa	gtg	ttg	9459
Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	
	3140					3145					3150				
gtg	aag	ggc	atc	gac	gcc	aag	tcc	tta	gtg	aag	aac	tgc	ccc	gag	9504
Val	Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	
	3155					3160					3165				
ttc	atc	agg	acc	tcc	atg	ttg	acc	ttc	ttc	aac	aat	gtc	gct	gat	9549
Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	
	3170					3175					3180				
gat	gta	ggg	cat	acc	atc	atg	aat	tta	cag	gat	ggg	aaa	tac	gcg	9594
Asp	Val	Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala	
	3185					3190					3195				
cac	ctt	cga	ggg	aca	cat	ttg	aag	acg	tcc	acg	tcc	ctg	ggc	tat	9639
His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr	
	3200					3205					3210				
atc	aat	gga	gta	ctg	ctc	ccc	ata	ctg	acg	gcc	aag	ttc	gac	cat	9684
Ile	Asn	Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His	
	3215					3220					3225				
ctg	gct	aac	tgc	gag	tac	ggg	gct	gat	ctg	ttg	ttg	gac	gag	ata	9729
Leu	Ala	Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile	
	3230					3235					3240				
caa	gtg	gcg	tca	tac	aag	atg	ttg	ggc	tcc	ctg	tac	gcg	ctc	ggc	9774
Gln	Val	Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly	
	3245					3250					3255				
acg	gac	gct	tcg	ctc	aca	cac	gac	aga	aag	tac	ctc	aag	act	gag	9819

Thr	Asp	Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu	
	3260					3265					3270				
att	gag	aga	cat	aaa	cct	gct	ttg	ggg	tcg	tgt	cta	ggg	gcg	ttc	9864
Ile	Glu	Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	
	3275					3280					3285				
agt	tcg	aca	ttc	cca	gtg	gcg	ttc	ttg	gaa	cct	cac	ctg	aac	aaa	9909
Ser	Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	
	3290					3295					3300				
cac	aac	cag	ttc	tcc	ttg	ctg	aac	agg	atc	gct	gac	cat	tct	ttg	9954
His	Asn	Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	
	3305					3310					3315				
gaa	gcc	caa	gac	ata	atg	cag	aaa	atg	gaa	caa	tgc	atg	ccg	acg	9999
Glu	Ala	Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	
	3320					3325					3330				
cta	gag	acg	atc	tta	ggc	gag	gtg	gac	caa	ttc	gtg	gag	tca	gac	10044
Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	
	3335					3340					3345				
aag	acg	tac	aac	gag	gcg	ccg	cat	atc	atc	gat	gtg	gtg	ctg	cct	10089
Lys	Thr	Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro	
	3350					3355					3360				
tta	ctc	tgt	tct	tat	ttg	ccg	ttc	tgg	tgg	gca	cag	ggg	cct	gat	10134
Leu	Leu	Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp	
	3365					3370					3375				
aat	gtt	act	cct	act	ggc	gga	aac	cac	gta	aca	atg	gta	aca	gcg	10179
Asn	Val	Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala	
	3380					3385					3390				
gaa	cac	atg	aac	cag	ctc	ctc	aag	aat	gtt	ctg	aag	ctc	atc	aaa	10224
Glu	His	Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys	
	3395					3400					3405				
aag	aac	atc	ggc	aat	gag	aac	gcg	ccg	tgg	atg	acc	cgc	atc	gcc	10269
Lys	Asn	Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala	
	3410					3415					3420				
acc	tac	acg	cag	cag	atc	atc	atc	aac	agc	tcc	gag	gaa	ctg	ctg	10314
Thr	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu	
	3425					3430					3435				
agg	gat	tcc	ttc	ctg	ccg	ctc	gct	gaa	cgt	gtt	cgc	aaa	cgc	acg	10359
Arg	Asp	Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr	
	3440					3445					3450				
gac	aat	atg	ttc	cat	aag	gag	gag	agc	ttg	aga	ggg	ttt	att	aag	10404
Asp	Asn	Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys	
	3455					3460					3465				
tcg	tca	aca	gac	gac	aca	tcc	cag	gta	gag	tct	cag	ata	caa	gaa	10449
Ser	Ser	Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu	
	3470					3475					3480				
gac	tgg	cag	ctg	ctg	gtc	aga	gac	atc	tac	tcc	ttc	tac	ccg	ctg	10494

Asp	Trp	Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	
3485						3490					3495				
ctc	atc	aag	tac	gtc	gac	ctg	cag	agg	aac	cac	tgg	ctc	agg	aac	10539
Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn	
3500						3505					3510				
aat	gtt	cca	gag	gcg	gaa	gag	ctg	tac	aac	cac	gtg	gct	gaa	atc	10584
Asn	Val	Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile	
3515						3520					3525				
ttc	aac	atc	tgg	tcg	aag	agc	cag	tac	ttc	ttg	aag	gag	gaa	cag	10629
Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln	
3530						3535					3540				
aac	ttc	atc	tct	gcc	aac	gaa	att	gat	aac	atg	gtg	ctg	att	atg	10674
Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met	
3545						3550					3555				
cca	aca	gca	aca	aga	aga	gtg	aca	gca	gta	aca	gat	ggg	act	cct	10719
Pro	Thr	Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro	
3560						3565					3570				
caa	ggg	ggg	gga	aag	aaa	aag	aag	aag	cac	cgt	gat	aag	aaa	cgc	10764
Gln	Gly	Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg	
3575						3580					3585				
gac	aaa	gac	aag	gaa	gtc	caa	gcg	tcc	cta	atg	gta	gct	tgt	ctg	10809
Asp	Lys	Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	
3590						3595					3600				
aag	agg	ttg	tta	cca	gtt	ggc	ctt	aac	cta	ttc	gct	ggc	aga	gaa	10854
Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	
3605						3610					3615				
caa	gaa	ctg	gtg	cag	cat	tgt	aaa	gac	agg	ttc	ctg	aag	aaa	atg	10899
Gln	Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Lys	Met	
3620						3625					3630				
tca	gaa	caa	gat	gtg	gca	gaa	ttc	gcg	aag	acc	cag	ctg	aca	ctt	10944
Ser	Glu	Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	
3635						3640					3645				
cca	gat	aaa	ata	gat	ccg	gca	gac	gaa	atg	tct	tgg	caa	cat	tac	10989
Pro	Asp	Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	
3650						3655					3660				
ttg	tat	agc	aag	tta	ggg	tcg	aag	agt	aag	agc	aat	ata	act	gtg	11034
Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	
3665						3670					3675				
gaa	act	gct	gaa	aat	aag	gcc	aag	att	att	gat	gat	acc	gtc	gag	11079
Glu	Thr	Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu	
3680						3685					3690				
aga	atc	gtc	gct	atg	agt	aaa	gtg	ctt	ttc	gga	ttg	cat	atg	atc	11124
Arg	Ile	Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	
3695						3700					3705				
gac	cat	ccc	caa	caa	atg	agt	aag	aac	gtg	tac	cgg	tcg	gtg	gtg	11169

Asp	His	Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	
3710						3715					3720				
tcg	ata	caa	cgc	aag	cgc	gcc	gtc	atc	gcc	tgc	ttc	cga	caa	act	11214
Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	
3725						3730					3735				
tca	cta	cat	tct	ctg	ccg	aga	cat	cga	gcg	tgt	aac	atc	ttc	gct	11259
Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	
3740						3745					3750				
cgc	acg	tac	tac	gag	ctc	tgg	ctg	gaa	gag	gag	aac	att	gga	caa	11304
Arg	Thr	Tyr	Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu	Asn	Ile	Gly	Gln	
3755						3760					3765				
gaa	gta	atg	ata	gaa	gat	ctt	act	caa	tca	ttc	gaa	gac	gca	gag	11349
Glu	Val	Met	Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	
3770						3775					3780				
ctg	aag	aag	agt	gac	gtg	gtg	gag	gaa	ggg	gag	aag	cct	gac	ccc	11394
Leu	Lys	Lys	Ser	Asp	Val	Val	Glu	Glu	Gly	Glu	Lys	Pro	Asp	Pro	
3785						3790					3795				
ctc	acg	cag	ctg	gtc	acc	acc	ttc	tgt	cgc	ggg	gcc	atg	act	gag	11439
Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	
3800						3805					3810				
agg	tcc	ggc	gct	ttg	cag	gag	gat	cct	cta	tac	atg	tct	tac	gca	11484
Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	
3815						3820					3825				
cac	atc	ata	gcg	aag	tcc	tgt	gga	gaa	gaa	gag	gaa	gaa	ggg	ggg	11529
His	Ile	Ile	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly	
3830						3835					3840				
ggg	gag	gaa	gag	gaa	ggg	ggg	gga	gaa	gca	gag	gct	gaa	gac	gaa	11574
Gly	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu	Ala	Glu	Asp	Glu	
3845						3850					3855				
ggc	aga	gcc	agt	ata	cac	gaa	caa	gaa	atg	gag	aaa	caa	aag	ctc	11619
Gly	Arg	Ala	Ser	Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	
3860						3865					3870				
cta	ttc	cac	caa	gcg	cgg	ctg	gcg	gac	cgt	ggg	gtt	gcc	gaa	atg	11664
Leu	Phe	His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met	
3875						3880					3885				
gtg	ttg	ctg	cac	atc	tcc	gcg	tcc	aaa	ggc	ctg	ccc	agc	gag	atg	11709
Val	Leu	Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met	
3890						3895					3900				
gtc	atg	aag	act	tta	cag	ctc	ggg	att	agt	ata	ctg	agg	ggc	ggc	11754
Val	Met	Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	
3905						3910					3915				
aat	att	gat	ata	cag	atg	ggg	atg	ttg	aac	cac	ttg	aaa	gac	aag	11799
Asn	Ile	Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys	
3920						3925					3930				
aaa	gac	gtg	ggc	ttc	ttt	acg	tcc	atc	gcc	ggc	ctc	atg	aac	tcc	11844

Lys	Asp	Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	
	3935					3940					3945				
tgc	tcc	gtg	ctc	gat	ctt	gac	gcc	ttc	gag	agg	aac	acc	aag	gct	11889
Cys	Ser	Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	
	3950					3955					3960				
gaa	ggg	ctg	ggc	gtg	ggg	ctg	gaa	ggg	gcg	gcg	gga	gag	aag	aac	11934
Glu	Gly	Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	
	3965					3970					3975				
atg	cat	gac	gcc	gag	ttc	acc	tgc	gca	ctc	ttc	agg	ttc	att	cag	11979
Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	
	3980					3985					3990				
ctc	acc	tgt	gaa	gga	cac	aac	ttg	gac	tgg	cag	aac	tac	ctg	cga	12024
Leu	Thr	Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	
	3995					4000					4005				
act	cag	gcc	ggg	aac	acg	aca	aca	gtg	aac	gtg	gtc	atc	tgc	acc	12069
Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	
	4010					4015					4020				
gtc	gac	tac	ctg	ctg	cgg	ctg	cag	gag	tcc	atc	atg	gac	ttc	tac	12114
Val	Asp	Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	
	4025					4030					4035				
tgg	cac	tac	tca	agc	aag	gaa	ctg	atc	gac	ccg	gcc	ggc	aaa	gcg	12159
Trp	His	Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	
	4040					4045					4050				
aac	ttc	ttc	aag	gcc	att	ggc	gtg	gct	tcc	caa	gta	ttc	aac	acc	12204
Asn	Phe	Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	
	4055					4060					4065				
ctc	act	gaa	gtc	ata	cag	gga	cct	tgt	acg	cag	aat	cag	cag	gct	12249
Leu	Thr	Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	
	4070					4075					4080				
ttg	gct	cac	tcc	agg	ttg	tgg	gac	gct	gtc	ggg	ggg	ttc	ctg	ttc	12294
Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	
	4085					4090					4095				
cta	ttc	tcc	cac	atg	cag	gac	aag	ttg	tcg	aag	cac	tcg	tcg	cag	12339
Leu	Phe	Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	
	4100					4105					4110				
gtg	gac	ctg	ctg	aag	gaa	ctc	ctc	aat	ctg	cag	aag	gac	atg	atc	12384
Val	Asp	Leu	Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	
	4115					4120					4125				
acc	atg	atg	ctg	tcc	atg	ctt	gaa	gga	aat	gtt	gtt	aat	ggg	aca	12429
Thr	Met	Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	
	4130					4135					4140				
atc	ggc	aag	caa	atg	gtg	gac	aca	cta	gta	gaa	tcg	gcc	tcc	aac	12474
Ile	Gly	Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	
	4145					4150					4155				
gtg	gaa	ctg	atc	ctg	aaa	tac	ttc	gac	atg	ttc	ctc	aag	ctg	aag	12519

Val	Glu	Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	
4160						4165					4170				
gac	ctg	acc	tcc	agc	gcc	agc	ttc	cag	gag	att	gat	gcc	aat	aac	12564
Asp	Leu	Thr	Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	
4175						4180					4185				
gac	ggc	tgg	gtg	ctg	ccc	aag	gac	ttc	aag	gag	aaa	atg	gaa	caa	12609
Asp	Gly	Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	
4190						4195					4200				
cag	aag	agt	tat	act	ccc	gaa	gaa	atc	gag	ttc	ctc	cta	gct	tgc	12654
Gln	Lys	Ser	Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	
4205						4210					4215				
tgc	gag	acg	aac	cac	gac	ggc	aag	tta	gac	tac	atc	ggt	ttc	tgc	12699
Cys	Glu	Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	
4220						4225					4230				
gac	cgt	ttc	cac	gag	cct	gcc	aag	gag	atc	ggg	ttt	aac	ttg	gcc	12744
Asp	Arg	Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	
4235						4240					4245				
gtg	tta	ctg	act	aac	ttg	tct	gaa	cat	atg	ccg	aac	gag	cct	aga	12789
Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	
4250						4255					4260				
ttg	gca	cgt	ttc	ctg	gag	acg	gca	ggg	tca	gtc	ctg	aac	tac	ttc	12834
Leu	Ala	Arg	Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	
4265						4270					4275				
gaa	cca	ttc	ctg	ggc	cgt	atc	gag	atc	atg	ggc	ggc	tcc	aag	cgc	12879
Glu	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	
4280						4285					4290				
atc	gag	cgt	gtc	tac	ttc	gag	atc	aag	gag	tct	aat	ata	gaa	cag	12924
Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	
4295						4300					4305				
tgg	gag	aaa	ccg	caa	att	aag	gaa	tcc	aaa	cgc	gcg	ttc	ttc	tac	12969
Trp	Glu	Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	
4310						4315					4320				
agc	ata	gta	aca	gaa	ggg	ggg	gat	aag	gaa	aaa	ttg	gag	gct	ttc	13014
Ser	Ile	Val	Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	
4325						4330					4335				
gtg	aac	ttc	tgt	gag	gac	gcc	atc	ttt	gaa	atg	acg	cac	gcg	tcg	13059
Val	Asn	Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	
4340						4345					4350				
gga	ctg	atg	gcc	gcg	tcc	gaa	gag	tcg	gtg	gga	ggg	acc	aag	aat	13104
Gly	Leu	Met	Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn	
4355						4360					4365				
aga	gag	gcc	agc	tat	atg	tat	atg	ggg	gat	gat	gat	gat	gag	aga	13149
Arg	Glu	Ala	Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Asp	Asp	Glu	Arg	
4370						4375					4380				
gcc	ggc	aaa	gat	cca	ttc	cgt	cgc	gga	ctc	cag	tca	gtc	aaa	gac	13194

Ala Gly	Lys Asp	Pro Phe	Arg	Arg Gly	Leu Gln	Ser	Val Lys Asp	
4385			4390			4395		
ggc gtc	gcc acg	gca ttt	tca	tcc tta	tct cct	tcc	aac ata aag	13239
Gly Val	Ala Thr	Ala Phe	Ser	Ser Leu	Ser Pro	Ser	Asn Ile Lys	
4400			4405			4410		
gcg aaa	atc gca	gac atg	cag	caa atg	cca cca	gcc	gaa cta gct	13284
Ala Lys	Ile Ala	Asp Met	Gln	Gln Met	Pro Pro	Ala	Glu Leu Ala	
4415			4420			4425		
gtg ggc	ttc ttc	aaa atg	ttc	ttc tat	cta ttc	tat	tac ttg ggc	13329
Val Gly	Phe Phe	Lys Met	Phe	Phe Tyr	Leu Phe	Tyr	Tyr Leu Gly	
4430			4435			4440		
tat gga	gtt ctc	gtc gtt	gtc	agg tat	ata ttc	ggg	gtg ctc ttg	13374
Tyr Gly	Val Leu	Val Val	Val	Arg Tyr	Ile Phe	Gly	Val Leu Leu	
4445			4450			4455		
ggg ctg	atg cga	ggg cct	cag	acg gat	gaa ccg	cct	ccg gag ccg	13419
Gly Leu	Met Arg	Gly Pro	Gln	Thr Asp	Glu Pro	Pro	Pro Glu Pro	
4460			4465			4470		
acg gaa	gag gag	aaa atc	ggg	cag ttg	aga cac	agg	ttg cta gcg	13464
Thr Glu	Glu Glu	Lys Ile	Gly	Gln Leu	Arg His	Arg	Leu Leu Ala	
4475			4480			4485		
aca caa	agt tct	cga cat	ctc	ccg gcg	ttg cct	cca	gct gat gat	13509
Thr Gln	Ser Ser	Arg His	Leu	Pro Ala	Leu Pro	Pro	Ala Asp Asp	
4490			4495			4500		
acg gga	cag atg	caa gtg	ccg	gca ttc	gga ctc	gat	atc acc aaa	13554
Thr Gly	Gln Met	Gln Val	Pro	Ala Phe	Gly Leu	Asp	Ile Thr Lys	
4505			4510			4515		
gaa gac	aat gga	cag ata	caa	gta aaa	cct cac	gaa	tca ccc agc	13599
Glu Asp	Asn Gly	Gln Ile	Gln	Val Lys	Pro His	Glu	Ser Pro Ser	
4520			4525			4530		
aca tcc	act cca	tca tca	ggc	gag gag	gcg gag	gtg	tca ccc gac	13644
Thr Ser	Thr Pro	Ser Ser	Gly	Glu Glu	Ala Glu	Val	Ser Pro Asp	
4535			4540			4545		
gag agc	gcc gac	cac acg	gag	gag cag	aga ccg	cct	tct ctt atc	13689
Glu Ser	Ala Asp	His Thr	Glu	Glu Gln	Arg Pro	Pro	Ser Leu Ile	
4550			4555			4560		
gac ctg	ctt ggt	ggg gaa	caa	gct aaa	aag caa	gct	cag gag agg	13734
Asp Leu	Leu Gly	Gly Glu	Gln	Ala Lys	Lys Gln	Ala	Gln Glu Arg	
4565			4570			4575		
atg gaa	gct caa	gct gct	caa	caa gct	gcc atg	tcg	gcc att gaa	13779
Met Glu	Ala Gln	Ala Ala	Gln	Gln Ala	Ala Met	Ser	Ala Ile Glu	
4580			4585			4590		
gct gaa	agc aaa	aag gca	gtg	caa ggg	ccc gca	cca	tca gcg cta	13824
Ala Glu	Ser Lys	Lys Ala	Val	Gln Gly	Pro Ala	Pro	Ser Ala Leu	
4595			4600			4605		
tct caa	gtg gac	ctg tcc	cag	tac acc	cgg cgc	gca	gtc tcg ttc	13869

Ser	Gln	Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe	
4610						4615					4620				
cta	gct	cgc	aac	ttc	tac	aac	ctg	aag	tac	gtg	gcg	ctc	gtg	ctg	13914
Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	
4625						4630					4635				
gcc	ttc	tgt	atc	aac	ttc	gtg	ctg	ctc	ttc	tat	aag	gta	tct	acc	13959
Ala	Phe	Cys	Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr	
4640						4645					4650				
ctg	gat	ggg	gaa	ggg	ggg	gaa	ggg	tca	ggg	ctg	ggg	gac	atc	atc	14004
Leu	Asp	Gly	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile	
4655						4660					4665				
gcc	ggg	ggg	ggg	tcc	gga	tcc	ggg	gct	ggc	tct	ggc	agt	gga	gac	14049
Ala	Gly	Gly	Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp	
4670						4675					4680				
ggg	agc	ggc	gag	tca	ggg	gaa	gat	gac	gac	gag	tta	gaa	gta	gta	14094
Gly	Ser	Gly	Glu	Ser	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val	
4685						4690					4695				
cac	ata	gac	gaa	gac	ttc	ttc	tat	atg	gaa	cac	gtc	atc	aag	atg	14139
His	Ile	Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met	
4700						4705					4710				
gcg	gcc	gtg	ctg	cac	tct	atc	gtg	tct	ctg	gct	ata	ctc	atc	gga	14184
Ala	Ala	Val	Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly	
4715						4720					4725				
tat	tat	cat	ctt	aag	gtg	ccg	cta	gcc	atc	ttc	aaa	cgt	gag	aag	14229
Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	
4730						4735					4740				
gag	atc	gct	cgt	aag	ctg	gaa	ttc	gac	ggg	ctg	tac	atc	gct	gaa	14274
Glu	Ile	Ala	Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	
4745						4750					4755				
cgg	cct	gaa	gac	gac	gac	ctc	aag	agc	cac	tgg	gac	aag	ctc	gtt	14319
Arg	Pro	Glu	Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	
4760						4765					4770				
ata	tct	gcc	aaa	tca	ttc	ccc	gta	aac	tac	tgg	gac	aag	ttt	gtg	14364
Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	
4775						4780					4785				
aag	aag	aag	gtt	cgc	gcc	aaa	tac	tcg	gag	aca	tat	gac	ttc	gac	14409
Lys	Lys	Lys	Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	
4790						4795					4800				
tcc	atc	tcc	aac	atg	ttg	ggc	atg	gag	aag	act	tcc	ttc	tcc	gcg	14454
Ser	Ile	Ser	Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala	
4805						4810					4815				
caa	gaa	gaa	gaa	ggc	agc	aaa	gga	ctt	att	cat	tac	ata	atc	aac	14499
Gln	Glu	Glu	Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn	
4820						4825					4830				
ata	gac	tgg	cgc	tac	caa	gtg	tgg	aag	gcc	ggc	gtg	acg	atc	aca	14544



Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	
4835						4840					4845				
gac	aac	tcg	ttc	ctc	tac	tcg	cta	tgg	tac	ttc	tcc	ttc	tcc	gtg	14589
Asp	Asn	Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val	
4850						4855					4860				
atg	ggg	aac	ttc	aac	aac	ttc	ttc	ttc	gcg	gca	cat	ttg	ttg	gac	14634
Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	
4865						4870					4875				
gtg	gct	gtt	ggg	ttt	aag	acc	ctg	agg	act	atc	ttg	cag	tct	gtc	14679
Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	
4880						4885					4890				
acg	cat	aat	gga	aaa	cag	ctg	gta	tta	acg	gtg	atg	ctg	ctg	act	14724
Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	
4895						4900					4905				
ata	atc	gtg	tac	atc	tac	acg	gtg	atc	gcg	ttc	aac	ttc	ttc	cgc	14769
Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	
4910						4915					4920				
aag	ttc	tac	gtg	cag	gag	gag	gac	gac	gaa	gtc	aat	agg	aac	tgc	14814
Lys	Phe	Tyr	Val	Gln	Glu	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys	
4925						4930					4935				
cat	gac	atg	ttg	acg	tgc	ttc	gtg	ttc	aac	ttg	tac	aag	ggg	gtg	14859
His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val	
4940						4945					4950				
cgg	gcg	ggc	ggc	ggc	atc	ggc	gac	gag	ctg	gag	ccg	cct	gat	gga	14904
Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu	Pro	Pro	Asp	Gly	
4955						4960					4965				
gac	gac	tcc	gag	gtc	tac	cgc	atc	atc	ttc	gac	atc	tcc	ttc	ttc	14949
Asp	Asp	Ser	Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp	Ile	Ser	Phe	Phe	
4970						4975					4980				
ttc	ttc	atc	atc	gtt	atc	ctg	ctc	gct	atc	ctg	cag	ggg	ttg	atc	14994
Phe	Phe	Ile	Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu	Gln	Gly	Leu	Ile	
4985						4990					4995				
atc	gac	gcg	ttc	gga	gag	ctg	cgt	gac	cag	ttg	gag	tcg	gtc	aag	15039
Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	
5000						5005					5010				
gag	gac	atg	gag	tcc	aac	tgc	ttc	atc	tgc	ggc	atc	aat	aaa	gac	15084
Glu	Asp	Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Asn	Lys	Asp	
5015						5020					5025				
tat	ttt	gat	aaa	gtg	ccg	cac	ggg	ttc	gac	aca	cac	gtg	caa	agg	15129
Tyr	Phe	Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Arg	
5030						5035					5040				
gaa	cac	aat	tta	gct	aat	tac	atg	ttc	ttc	ctc	atg	cat	ctc	att	15174
Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	
5045						5050					5055				
aat	aaa	ccc	gat	acg	gag	tat	aca	ggg	caa	gaa	acc	tac	gta	tgg	15219

Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	
5060						5065					5070				
aac	atg	tac	aca	caa	aga	tgt	tgg	gac	ttt	ttc	ccc	gtg	gga	gat	15264
Asn	Met	Tyr	Thr	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	
5075						5080					5085				
tgt	ttc	cga	aag	caa	tac	gaa	gac	ctc	atg	gga	gaa	tag			15303
Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Leu	Met	Gly	Glu				
5090						5095					5100				
<210>		146													
<211>		5100													
<212>		PRT													
<213>		Heliothis virescens													
<220>															
<223>		pXL-Hv6													
<400>		146													
Met	Ala	Glu	Ala	Glu	Gly	Gly	Ala	Ser	Glu	Gln	Asp	Asp	Val	Ser	Phe
1				5					10					15	
Leu	Arg	Thr	Glu	Asp	Met	Val	Cys	Leu	Ser	Cys	Thr	Ala	Thr	Gly	Glu
			20					25					30		
Arg	Val	Cys	Leu	Ala	Ala	Glu	Gly	Phe	Gly	Asn	Arg	His	Cys	Phe	Leu
		35					40					45			
Glu	Asn	Ile	Ala	Asp	Lys	Asn	Ile	Pro	Pro	Asp	Leu	Ser	Gln	Cys	Val
	50					55					60				
Phe	Val	Ile	Glu	Gln	Ala	Leu	Ser	Val	Arg	Ala	Leu	Gln	Glu	Leu	Val
65				70						75				80	
Thr	Ala	Ala	Gly	Ser	Glu	Thr	Gly	Lys	Glu	Asn	Leu	Gly	Lys	Gly	Thr
				85					90					95	
Gly	Ser	Gly	His	Arg	Thr	Leu	Leu	Tyr	Gly	Asn	Ala	Ile	Leu	Leu	Arg
			100					105					110		
His	Leu	Asn	Ser	Asp	Met	Tyr	Leu	Ala	Cys	Leu	Ser	Thr	Ser	Ser	Ser
		115					120					125			
Gln	Asp	Lys	Leu	Ala	Phe	Asp	Val	Gly	Leu	Gln	Gln	His	Ser	Gln	Gly
	130					135					140				
Glu	Ala	Cys	Trp	Trp	Thr	Leu	His	Pro	Ala	Ser	Lys	Gln	Arg	Ser	Glu
145					150					155					160
Gly	Glu	Lys	Val	Arg	Val	Gly	Asp	Asp	Leu	Ile	Leu	Val	Ser	Val	Ala
				165					170					175	
Thr	Glu	Arg	Tyr	Leu	His	Thr	Thr	Lys	Glu	Asn	Glu	Val	Ser	Ile	Val
			180					185					190		
Asn	Ala	Ser	Phe	His	Val	Thr	His	Trp	Ser	Val	Gln	Pro	Tyr	Gly	Thr
		195					200					205			

Gly	Ile	Ser	Arg	Met	Lys	Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val	210	215	220	
Leu	Arg	Phe	Phe	His	Gly	Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	225	230	235	240
Trp	Thr	Lys	Asp	Gly	Gly	Gln	Asn	Ile	Val	Val	Tyr	Glu	Gly	Gly	Ser	245	250	255	
Val	Met	Ser	Gln	Ala	Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	260	265	270	
Lys	Trp	Ala	Gly	Gly	Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	275	280	285	
His	Ile	Thr	Thr	Gly	Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu	290	295	300	
Tyr	Leu	Val	Ser	Arg	Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys	305	310	315	320
Leu	Arg	Gln	Glu	Lys	Asp	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp	325	330	335	
Leu	Glu	Val	Ile	Gly	Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	340	345	350	
Ile	Val	Gln	His	Ser	Glu	Thr	Gly	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	355	360	365	
Glu	Thr	Lys	Lys	Lys	Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	370	375	380	
Leu	His	Glu	Glu	Gly	Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser	385	390	395	400
Gln	Glu	Glu	Glu	Ser	Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	405	410	415	
Leu	Phe	Thr	Lys	Phe	Ile	Asn	Gly	Leu	Glu	Thr	Leu	Gln	Glu	Asn	Arg	420	425	430	
Arg	His	Ser	Met	Phe	Phe	Ala	Ser	Val	Asn	Leu	Gly	Glu	Met	Val	Met	435	440	445	
Cys	Leu	Glu	Asp	Leu	Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Asp	Glu	Asp	Met	450	455	460	
Glu	His	Glu	Glu	Lys	Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	465	470	475	480
Asp	Leu	Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	485	490	495	
Asp	Lys	Ile	Asn	Val	Ile	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu	500	505	510	
Ala	Gly	Asp	Glu	Ser	Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu	515	520	525	

Tyr Gln Leu Leu Ala Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala  
 530 535 540  
 Gln Phe Ala Asn Ser Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly  
 545 550 555 560  
 Ser Gln Ala Ser Gly Glu Gly Thr Gly Met Leu Asp Val Leu His Cys  
 565 570 575  
 Val Leu Ile Asp Ser Pro Glu Ala Leu Asn Met Met Arg Asp Glu His  
 580 585 590  
 Ile Lys Val Ile Ile Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys  
 595 600 605  
 Val Leu Asp Val Leu Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val  
 610 615 620  
 Arg Ser Ser Gln Asn Asn Ile Cys Asp Tyr Leu Leu Pro Gly Lys Asn  
 625 630 635 640  
 Leu Leu Leu Gln Thr Ala Leu Val Asp His Val Ser Ser Val Arg Pro  
 645 650 655  
 Asn Ile Phe Val Gly Arg Val Glu Gly Ser Ala Val Tyr Arg Lys Trp  
 660 665 670  
 Tyr Phe Glu Val Thr Met Asp His Ile Glu Lys Thr Thr His Met Met  
 675 680 685  
 Pro His Leu Arg Ile Gly Trp Ala Asn Thr Thr Gly Tyr Val Pro Tyr  
 690 695 700  
 Pro Gly Gly Gly Glu Lys Trp Gly Gly Asn Gly Val Gly Asp Asp Leu  
 705 710 715 720  
 Tyr Ser Tyr Gly Leu Asp Gly Ala Tyr Leu Trp Ser Gly Gly Arg Lys  
 725 730 735  
 Thr Pro Val Asn Arg Thr His Ala Glu Glu Pro Tyr Ile Arg Lys Gly  
 740 745 750  
 Asp Val Ile Gly Cys Ala Leu Asp Leu Thr Val Pro Ile Ile Asn Phe  
 755 760 765  
 Met Phe Asn Gly Val Arg Val Thr Gly Ser Phe Thr Asn Phe Asn Leu  
 770 775 780  
 Glu Gly Met Phe Phe Pro Val Ile Ser Cys Ser Ser Lys Leu Ser Cys  
 785 790 795 800  
 Arg Phe Leu Leu Gly Gly Glu His Gly Arg Leu Arg Tyr Ala Ala Pro  
 805 810 815  
 Glu Gly Tyr Ser Pro Leu Val Glu Ser Leu Leu Pro Gln Gln Ile Leu  
 820 825 830  
 Ser Leu Glu Pro Cys Phe Tyr Phe Gly Asn Leu Ser Lys Arg Ala Leu  
 835 840 845

Ala	Gly	Pro	Pro	Leu	Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	850	855	860	
Val	Asp	Thr	Leu	Gln	Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	865	870	875	880
Asp	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	Met	Trp	Ala	Met	Asn	Lys	Ile	885	890	895	
Glu	Ala	Gly	Trp	Met	Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His	Lys	Ile	900	905	910	
His	Pro	Cys	Leu	Val	Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu	Lys	Arg	915	920	925	
Tyr	Asp	Ile	Gln	Leu	Ala	Val	Gln	Thr	Leu	Lys	Thr	Ile	Leu	Ala	Leu	930	935	940	
Gly	Tyr	Tyr	Ile	Ser	Leu	Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Asn	Val	945	950	955	960
Arg	Leu	Pro	Asn	Glu	Pro	Phe	Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	965	970	975	
Pro	Leu	Asp	Leu	Ser	Ala	Val	Thr	Leu	Thr	Pro	Lys	Met	Asp	Glu	Leu	980	985	990	
Val	Asp	Gln	Leu	Ala	Glu	Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	995	1000	1005	
Ile	Gln	Gln	Gly	Trp	Thr	Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Asp	Met		1010	1015	1020	
His	Arg	Ser	Pro	His	Leu	Val	Pro	Tyr	Pro	Lys	Val	Asp	Asp	Ala		1025	1030	1035	
Ile	Lys	Lys	Ala	Asn	Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr		1040	1045	1050	
Leu	Leu	Val	Tyr	Gly	Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln		1055	1060	1065	
His	Glu	Ala	Leu	Leu	Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp		1070	1075	1080	
Phe	Arg	Thr	Tyr	Arg	Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly		1085	1090	1095	
Lys	Trp	Tyr	Phe	Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg		1100	1105	1110	
Val	Gly	Trp	Ala	His	Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly		1115	1120	1125	
Gln	Asp	Glu	Asn	Ser	Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys		1130	1135	1140	
Val	Tyr	Ser	Gly	Asn	Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val		1145	1150	1155	

Gly	Asp	Val	Val	Gly	Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile
1160						1165					1170			
Ser	Phe	Ser	Leu	Asn	Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly
1175						1180					1185			
Glu	Thr	Thr	Phe	Ala	Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala
1190						1195					1200			
Cys	Thr	Leu	Gly	Val	Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln
1205						1210					1215			
Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu
1220						1225					1230			
Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His
1235						1240					1245			
Trp	Tyr	Thr	Lys	Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met
1250						1255					1260			
Ile	Asp	Thr	Arg	Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp
1265						1270					1275			
Thr	Pro	Pro	Cys	Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met
1280						1285					1290			
Glu	Lys	Ala	Asn	Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile
1295						1300					1305			
Cys	His	Asn	Glu	Phe	Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp
1310						1315					1320			
Val	Glu	Ile	Lys	Asp	Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val
1325						1330					1335			
Glu	Ala	Gln	Met	Pro	Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly
1340						1345					1350			
Phe	Thr	Met	Asn	Asp	Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln
1355						1360					1365			
Glu	Glu	Leu	Pro	Ser	Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro
1370						1375					1380			
Pro	Arg	Lys	Gly	Ser	Met	Thr	Arg	Gly	Gln	Val	Asn	Gly	Met	His
1385						1390					1395			
Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met	Ala	Lys	Tyr	Asp	Leu	Gly	Ala
1400						1405					1410			
Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys	Lys	Asp	Lys	Arg	Gly	Arg	Ser
1415						1420					1425			
Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys	Arg	Gly	Glu	Ser	Ser	Asp	Arg
1430						1435					1440			
Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr	Pro	Asp	Pro	Phe	Ser	Asp	Thr
1445						1450					1455			

Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala	Arg	Arg	Pro	Asn	Pro	Gln	Ile
1460						1465					1470			
Lys	Val	Ser	Gln	Ser	Asn	Ala	Gln	Met	Ala	Thr	Pro	Thr	Gln	Asp
1475						1480					1485			
Arg	Lys	Gln	Met	Thr	Thr	Ser	Thr	Leu	Ala	Gln	Ser	Ala	Thr	Glu
1490						1495					1500			
Thr	Val	Gly	Asn	Glu	Ile	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile
1505						1510					1515			
Asn	Glu	Tyr	Phe	Tyr	Gly	Val	Arg	Ile	Tyr	Pro	Gly	Gln	Asp	Pro
1520						1525					1530			
Thr	His	Val	Tyr	Ile	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His
1535						1540					1545			
Ser	Lys	Asp	Phe	Asn	Gln	Ser	Lys	Val	Thr	Lys	Ser	Ser	Val	Ile
1550						1555					1560			
Ile	Ile	Asp	Asp	Tyr	Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln
1565						1570					1575			
Ser	Cys	Tyr	Met	Val	Arg	Ala	Asp	Glu	Leu	Tyr	Asn	Glu	Val	Met
1580						1585					1590			
Ala	Glu	Ala	Thr	Ala	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Ile	Gly
1595						1600					1605			
Cys	Ser	Val	Asp	Thr	Ser	Thr	Gly	Ser	Val	Ser	Phe	Thr	Cys	Glu
1610						1615					1620			
Gly	Lys	Asp	Thr	Ser	Phe	Lys	Phe	Lys	Met	Glu	Pro	Glu	Thr	Lys
1625						1630					1635			
Leu	Phe	Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu
1640						1645					1650			
Gln	Ile	Glu	Leu	Gly	Arg	Ser	Ala	Thr	Ser	Leu	Pro	Leu	Ser	Ala
1655						1660					1665			
Ala	Val	Leu	Pro	Thr	Ser	Asp	Lys	His	Val	Ile	Pro	Gln	Phe	Pro
1670						1675					1680			
Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg
1685						1690					1695			
Val	Pro	Asn	Gln	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp
1700						1705					1710			
Ile	Arg	Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu
1715						1720					1725			
Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu
1730						1735					1740			
Leu	Ile	Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu
1745						1750					1755			

Thr	Leu	Tyr	Ala	Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala
1760						1765					1770			
His	Ala	Leu	Cys	Thr	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala
1775						1780					1785			
Ile	Gln	Ser	Gln	Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr
1790						1795					1800			
Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met
1805						1810					1815			
Glu	Ala	Cys	Lys	Asn	Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu
1820						1825					1830			
Lys	Ala	Leu	Tyr	Glu	Glu	Pro	Asp	Met	Gly	His	Ser	Leu	Arg	Ser
1835						1840					1845			
Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile
1850						1855					1860			
Ala	Glu	Ser	Ile	Thr	Glu	Ile	Ser	Asn	Leu	Tyr	Ser	Pro	Tyr	Phe
1865						1870					1875			
Pro	Leu	Glu	Val	Val	Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu
1880						1885					1890			
Ala	Val	Glu	Thr	Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Val	Gly	Gly
1895						1900					1905			
Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg
1910						1915					1920			
Leu	Leu	Leu	Val	Gly	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu
1925						1930					1935			
Leu	Ile	Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys
1940						1945					1950			
Glu	Gly	Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met
1955						1960					1965			
Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu
1970						1975					1980			
Asn	Asp	Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe
1985						1990					1995			
Ala	His	Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg
2000						2005					2010			
Tyr	Thr	Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala
2015						2020					2025			
Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn
2030						2035					2040			
Ala	Ile	Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn
2045						2050					2055			



Cys 2060	Pro	Cys	Gly	Glu	Glu	Leu 2065	Ile	Ala	Arg	Met	Asn 2070	Glu	Phe	His
Asp 2075	Thr	Leu	Met	Ala	His	Val 2080	Ser	Leu	His	Ala	Leu 2085	Gln	Glu	Pro
Asp 2090	Ala	Ala	Glu	Asn	Gln	Glu 2095	Pro	Glu	Ala	Lys	Pro 2100	Gly	Ala	Phe
Gly 2105	Lys	Leu	Tyr	Asn	Ile	Ile 2110	Asn	Thr	Val	Lys	Glu 2115	Leu	Glu	Glu
Glu 2120	Ala	Lys	Ala	Ile	Glu	Glu 2125	Pro	Pro	Lys	Lys	Thr 2130	Pro	Glu	Glu
Lys 2135	Phe	Arg	Lys	Val	Leu	Ile 2140	Gln	Thr	Ile	Val	Asn 2145	Trp	Ala	Glu
Glu 2150	Ser	Gln	Ile	Glu	Thr	Pro 2155	Lys	Leu	Val	Arg	Glu 2160	Met	Phe	Ser
Leu 2165	Leu	Val	Arg	Gln	Tyr	Asp 2170	Ala	Val	Gly	Glu	Leu 2175	Ile	Arg	Ala
Leu 2180	Glu	Lys	Thr	Tyr	Val	Ile 2185	Asn	Ala	Lys	Thr	Lys 2190	Leu	Asp	Val
Ala 2195	Glu	Met	Trp	Val	Gly	Leu 2200	Ser	Gln	Ile	Arg	Ala 2205	Leu	Leu	Pro
Val 2210	Gln	Met	Ser	Gln	Glu	Glu 2215	Glu	Glu	Leu	Met	Arg 2220	Lys	Arg	Leu
Trp 2225	Lys	Leu	Val	Asn	Asn	His 2230	Thr	Phe	Phe	Gln	His 2235	Pro	Asp	Leu
Ile 2240	Arg	Val	Leu	Arg	Val	His 2245	Glu	Asn	Val	Met	Ala 2250	Val	Met	Met
Asn 2255	Thr	Leu	Gly	Arg	Arg	Ala 2260	Gln	Ala	Gln	Ser	Asp 2265	Ala	Gln	Pro
Ser 2270	Ser	Gln	Pro	Val	Ala	Glu 2275	Asp	Asn	Lys	Glu	Lys 2280	Asp	Thr	Ser
His 2285	Glu	Met	Val	Val	Ala	Cys 2290	Cys	Arg	Phe	Leu	Cys 2295	Tyr	Phe	Cys
Arg 2300	Thr	Gly	Arg	Gln	Asn	Gln 2305	Lys	Ala	Met	Phe	Asp 2310	His	Phe	Asp
Phe 2315	Leu	Leu	Glu	Asn	Ser	Asn 2320	Ile	Leu	Leu	Ser	Arg 2325	Pro	Ser	Leu
Arg 2330	Gly	Ser	Thr	Pro	Leu	Asp 2335	Val	Ala	Tyr	Ser	Ser 2340	Leu	Met	Glu
Asn 2345	Thr	Glu	Leu	Ala	Leu	Ala 2350	Leu	Arg	Glu	His	Tyr 2355	Leu	Glu	Lys

Ile	Ala	Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu
2360						2365					2370			
Leu	Val	Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu
2375						2380					2385			
Gly	Glu	Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn
2390						2395					2400			
Gly	Glu	Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu
2405						2410					2415			
Ile	Arg	Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly
2420						2425					2430			
Glu	Gly	Leu	Leu	Lys	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu
2435						2440					2445			
Arg	Ile	Ala	Asp	Arg	Arg	Lys	Leu	Arg	Glu	Met	Glu	Gln	Glu	Gly
2450						2455					2460			
Asp	Val	Asn	Phe	Ser	His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu
2465						2470					2475			
Asp	Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr
2480						2485					2490			
Leu	Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Gly	Val	Ile
2495						2500					2505			
Ala	Leu	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg
2510						2515					2520			
Ser	Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Arg
2525						2530					2535			
Phe	Thr	Leu	Asn	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	Ser
2540						2545					2550			
Asp	Met	Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	Gly
2555						2560					2565			
Leu	Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	Phe
2570						2575					2580			
Tyr	Lys	Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala
2585						2590					2595			
Thr	Met	Leu	Asp	Arg	Asn	Asp	Gly	Cys	Glu	Ser	Asp	Met	Ala	Leu
2600						2605					2610			
Ser	Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile
2615						2620					2625			
Lys	His	Ala	Tyr	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu
2630						2635					2640			
Leu	Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg
2645						2650					2655			

Met	Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val
2660						2665					2670			
Ala	Leu	Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu
2675						2680					2685			
Arg	Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr
2690						2695					2700			
Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys
2705						2710					2715			
Tyr	Tyr	Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser
2720						2725					2730			
Ser	Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile
2735						2740					2745			
Phe	Asp	Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly
2750						2755					2760			
Lys	Ala	Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro
2765						2770					2775			
Asp	Tyr	Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys
2780						2785					2790			
Glu	Gln	Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln
2795						2800					2805			
Pro	Ile	Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr
2810						2815					2820			
Ile	Val	Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser
2825						2830					2835			
Arg	Lys	Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp
2840						2845					2850			
Ser	Gln	Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn
2855						2860					2865			
Asp	Tyr	Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu
2870						2875					2880			
Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val
2885						2890					2895			
Asp	Ile	Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys
2900						2905					2910			
Ser	Gly	Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro
2915						2920					2925			
Phe	Asn	Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu
2930						2935					2940			
Ser	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala
2945						2950					2955			

His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn
	2960					2965					2970			
Gly	Gly	Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr
	2975					2980					2985			
Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu
	2990					2995					3000			
Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys
	3005					3010					3015			
Ala	Pro	Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile
	3020					3025					3030			
Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr
	3035					3040					3045			
Ile	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr
	3050					3055					3060			
Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile
	3065					3070					3075			
Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe
	3080					3085					3090			
Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn
	3095					3100					3105			
Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala
	3110					3115					3120			
Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala
	3125					3130					3135			
Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu
	3140					3145					3150			
Val	Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu
	3155					3160					3165			
Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp
	3170					3175					3180			
Asp	Val	Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala
	3185					3190					3195			
His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr
	3200					3205					3210			
Ile	Asn	Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His
	3215					3220					3225			
Leu	Ala	Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile
	3230					3235					3240			
Gln	Val	Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly
	3245					3250					3255			

Thr	Asp	Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu
3260						3265					3270			
Ile	Glu	Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe
3275						3280					3285			
Ser	Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys
3290						3295					3300			
His	Asn	Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu
3305						3310					3315			
Glu	Ala	Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr
3320						3325					3330			
Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp
3335						3340					3345			
Lys	Thr	Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro
3350						3355					3360			
Leu	Leu	Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp
3365						3370					3375			
Asn	Val	Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala
3380						3385					3390			
Glu	His	Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys
3395						3400					3405			
Lys	Asn	Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala
3410						3415					3420			
Thr	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu
3425						3430					3435			
Arg	Asp	Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr
3440						3445					3450			
Asp	Asn	Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys
3455						3460					3465			
Ser	Ser	Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu
3470						3475					3480			
Asp	Trp	Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu
3485						3490					3495			
Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn
3500						3505					3510			
Asn	Val	Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile
3515						3520					3525			
Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln
3530						3535					3540			
Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met
3545						3550					3555			

Pro	Thr	Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro
3560						3565					3570			
Gln	Gly	Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg
3575						3580					3585			
Asp	Lys	Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu
3590						3595					3600			
Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu
3605						3610					3615			
Gln	Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Lys	Met
3620						3625					3630			
Ser	Glu	Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu
3635						3640					3645			
Pro	Asp	Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr
3650						3655					3660			
Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val
3665						3670					3675			
Glu	Thr	Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu
3680						3685					3690			
Arg	Ile	Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile
3695						3700					3705			
Asp	His	Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val
3710						3715					3720			
Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr
3725						3730					3735			
Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala
3740						3745					3750			
Arg	Thr	Tyr	Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu	Asn	Ile	Gly	Gln
3755						3760					3765			
Glu	Val	Met	Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu
3770						3775					3780			
Leu	Lys	Lys	Ser	Asp	Val	Val	Glu	Glu	Gly	Glu	Lys	Pro	Asp	Pro
3785						3790					3795			
Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu
3800						3805					3810			
Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala
3815						3820					3825			
His	Ile	Ile	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly
3830						3835					3840			
Gly	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu	Ala	Glu	Asp	Glu
3845						3850					3855			

Gly	Arg	Ala	Ser	Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu
3860						3865					3870			
Leu	Phe	His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met
3875						3880					3885			
Val	Leu	Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met
3890						3895					3900			
Val	Met	Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly
3905						3910					3915			
Asn	Ile	Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys
3920						3925					3930			
Lys	Asp	Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser
3935						3940					3945			
Cys	Ser	Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala
3950						3955					3960			
Glu	Gly	Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn
3965						3970					3975			
Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln
3980						3985					3990			
Leu	Thr	Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg
3995						4000					4005			
Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr
4010						4015					4020			
Val	Asp	Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr
4025						4030					4035			
Trp	His	Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala
4040						4045					4050			
Asn	Phe	Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr
4055						4060					4065			
Leu	Thr	Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala
4070						4075					4080			
Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe
4085						4090					4095			
Leu	Phe	Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln
4100						4105					4110			
Val	Asp	Leu	Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile
4115						4120					4125			
Thr	Met	Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr
4130						4135					4140			
Ile	Gly	Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn
4145						4150					4155			

Val	Glu	Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys
4160						4165					4170			
Asp	Leu	Thr	Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn
4175						4180					4185			
Asp	Gly	Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln
4190						4195					4200			
Gln	Lys	Ser	Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys
4205						4210					4215			
Cys	Glu	Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys
4220						4225					4230			
Asp	Arg	Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala
4235						4240					4245			
Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg
4250						4255					4260			
Leu	Ala	Arg	Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe
4265						4270					4275			
Glu	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg
4280						4285					4290			
Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln
4295						4300					4305			
Trp	Glu	Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr
4310						4315					4320			
Ser	Ile	Val	Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe
4325						4330					4335			
Val	Asn	Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser
4340						4345					4350			
Gly	Leu	Met	Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn
4355						4360					4365			
Arg	Glu	Ala	Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Asp	Asp	Glu	Arg
4370						4375					4380			
Ala	Gly	Lys	Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln	Ser	Val	Lys	Asp
4385						4390					4395			
Gly	Val	Ala	Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro	Ser	Asn	Ile	Lys
4400						4405					4410			
Ala	Lys	Ile	Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala
4415						4420					4425			
Val	Gly	Phe	Phe	Lys	Met	Phe	Phe	Tyr	Leu	Phe	Tyr	Tyr	Leu	Gly
4430						4435					4440			
Tyr	Gly	Val	Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu
4445						4450					4455			



Gly	Leu	Met	Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro	Pro	Pro	Glu	Pro
4460						4465					4470			
Thr	Glu	Glu	Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala
4475						4480					4485			
Thr	Gln	Ser	Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp
4490						4495					4500			
Thr	Gly	Gln	Met	Gln	Val	Pro	Ala	Phe	Gly	Leu	Asp	Ile	Thr	Lys
4505						4510					4515			
Glu	Asp	Asn	Gly	Gln	Ile	Gln	Val	Lys	Pro	His	Glu	Ser	Pro	Ser
4520						4525					4530			
Thr	Ser	Thr	Pro	Ser	Ser	Gly	Glu	Glu	Ala	Glu	Val	Ser	Pro	Asp
4535						4540					4545			
Glu	Ser	Ala	Asp	His	Thr	Glu	Glu	Gln	Arg	Pro	Pro	Ser	Leu	Ile
4550						4555					4560			
Asp	Leu	Leu	Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln	Ala	Gln	Glu	Arg
4565						4570					4575			
Met	Glu	Ala	Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu
4580						4585					4590			
Ala	Glu	Ser	Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu
4595						4600					4605			
Ser	Gln	Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe
4610						4615					4620			
Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu
4625						4630					4635			
Ala	Phe	Cys	Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr
4640						4645					4650			
Leu	Asp	Gly	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile
4655						4660					4665			
Ala	Gly	Gly	Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp
4670						4675					4680			
Gly	Ser	Gly	Glu	Ser	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val
4685						4690					4695			
His	Ile	Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met
4700						4705					4710			
Ala	Ala	Val	Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly
4715						4720					4725			
Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys
4730						4735					4740			
Glu	Ile	Ala	Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu
4745						4750					4755			

Arg	Pro	Glu	Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val
4760						4765					4770			
Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val
4775						4780					4785			
Lys	Lys	Lys	Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp
4790						4795					4800			
Ser	Ile	Ser	Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala
4805						4810					4815			
Gln	Glu	Glu	Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn
4820						4825					4830			
Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr
4835						4840					4845			
Asp	Asn	Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val
4850						4855					4860			
Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp
4865						4870					4875			
Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val
4880						4885					4890			
Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr
4895						4900					4905			
Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg
4910						4915					4920			
Lys	Phe	Tyr	Val	Gln	Glu	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys
4925						4930					4935			
His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val
4940						4945					4950			
Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu	Pro	Pro	Asp	Gly
4955						4960					4965			
Asp	Asp	Ser	Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp	Ile	Ser	Phe	Phe
4970						4975					4980			
Phe	Phe	Ile	Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu	Gln	Gly	Leu	Ile
4985						4990					4995			
Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys
5000						5005					5010			
Glu	Asp	Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Asn	Lys	Asp
5015						5020					5025			
Tyr	Phe	Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Arg
5030						5035					5040			
Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile
5045						5050					5055			

Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp
5060						5065					5070			
Asn	Met	Tyr	Thr	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp
5075						5080					5085			
Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Leu	Met	Gly	Glu			
5090						5095					5100			

<210> 147  
 <211> 30  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR forward intron primer

<400> 147  
 cagtaaagct tgagtcatgg aaatttagac

30

<210> 148  
 <211> 27  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR reverse intron primer

<400> 148  
 tctggatcct ggtttggaat atgggga

27

<210> 149  
 <211> 459  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> intron

<400> 149	
gtgagtcatg gaaatttaga ctttattgta atactgatag ggtatagggt taaatgttta	60
ctacgttatt tagttacttc atgacgatga cgattaaaaa tggtatatgt tacatgcaga	120
aaactgtgga tatgtttatg gtatgtattt taaattagggt ttcactattc cgtgttcggt	180
agataaatct atcggcatcc gatgctttcg tggatatttc agagggtacc caaaattaca	240
atcgattgcc aagtctcttt cgcttttaat tagctgttca cagtgggtcc aagcacgacc	300
cgaggaatct acttcacgca ccttgatgaa aaaccattct ctgggtctgg actaactgtg	360
ttccaattaa atcagttcaa tattttattg taacagacaa acagattaag ttaataatat	420
tagcaaggat tataaataaa ctcccatttt ccaaaccag	459